

*College
of
Science
Literature
and
the Arts*

1951-1953

*THE Bulletin OF THE
UNIVERSITY OF MINNESOTA*

How to Use This Bulletin

This bulletin gives information about the College of Science, Literature, and the Arts. Keep it at hand for ready reference.

Section I describes the purposes and programs of the college as well as the chief regulations. Read this portion carefully to insure wise and accurate program planning.

Section II describes the courses offered in the college with the instructors, hours, and days for each, and it also lists the departmental major requirements.

Section III describes the Junior College programs that are prerequisite for students wishing to transfer to various professional schools after two or three years.

While this bulletin gives all information necessary for program planning, it will be necessary to consult the *Class Schedule* published just prior to each quarter to ascertain room numbers and any last-minute changes in offerings. For any changes in regulations following publication of this bulletin, you should consult the appropriate college office.

Do not attempt to register from the *Class Schedule* alone. This *Bulletin of the College of Science, Literature, and the Arts* is essential for securing course descriptions and prerequisites, college rules and requirements, and the other information necessary for sound program planning.

You will also wish to read the *Bulletin of General Information* telling about the University as a whole. And the *New Students' Handbook* describes personnel services and campus activities.

Copies of all bulletins of the University can be obtained at the Information Window in the Administration Building.

COLLEGE OFFICES

Office of the Dean

Dean of the College, 215 Johnston Hall

Assistant Dean for Students' Work, 215 Johnston Hall

Senior College Offices

Assistant Dean for the Senior College, 225 Johnston Hall

Students' Work Committee Representatives, 225 Johnston Hall

Senior College Counselors, 225 Johnston Hall

Placement Consultant, 225 Johnston Hall

Junior College Offices

Assistant Dean for the Junior College, 208 Johnston Hall

Students' Work Committee Representatives, 214 Johnston Hall

Coordinator of Faculty Counseling, 214 Johnston Hall

Junior College Counselors, 220 Johnston Hall

Tally Office, 210 Johnston Hall

Volume LIV

Number 24

May 8, 1951

Entered at the post office in Minneapolis as semi-monthly second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918.

BOARD OF REGENTS

The Board of Regents is composed of The Honorable Ray J. Quinlivan, St. Cloud, First Vice President and Chairman; The Honorable George W. Lawson, St. Paul, Second Vice President; The Honorable James F. Bell, Minneapolis; The Honorable Daniel C. Gainey, Owatonna; The Honorable Richard L. Griggs, Duluth; The Honorable J. S. Jones, St. Paul; The Honorable Lester A. Malkerson, Minneapolis; The Honorable Charles W. Mayo, Rochester; The Honorable E. E. Novak, New Prague; The Honorable A. J. Olson, Renville; The Honorable Herman F. Skyberg, Fisher; and The Honorable Sheldon V. Wood, Minneapolis

ADMINISTRATIVE OFFICERS

James Lewis Morrill, President

Malcolm M. Willey, Vice President, Academic Administration

William T. Middlebrook, Vice President, Business Administration

Robert Edward Summers, Dean of Admissions and Records

Edmund G. Williamson, Dean of Students

_____, Dean (215 Johnston Hall)

J. William Buchta, Assistant Dean for Senior College (225 Johnston Hall)

Russell M. Cooper, Assistant Dean for Junior College (208 Johnston Hall)

Roger B. Page, Assistant Dean and Chairman of the Students' Work Committee (215 Johnston Hall)

William C. Stevens, Coordinator of Junior College Faculty Counseling and Secretary of the Students' Work Committee (214 Johnston Hall)

Mabel K. Powers, Administrative Assistant and Counselor in the Senior College (225 Johnston Hall)

DEPARTMENT CHAIRMEN, HEADS, AND DIRECTORS

American Studies, Tremaine McDowell (1 Folwell Hall)

Anthropology, Wilson D. Wallis (342 Ford Hall)

Art, H. Harvard Arnason (108 Jones Hall)

Astronomy, Willem J. Luyten (359 Physics Building)

Botany, A. Orville Dahl (8 Botany Building)

Classics, Norman J. DeWitt (118 Folwell Hall)

English, Theodore Hornberger (219 Folwell Hall)

General Studies, Russell M. Cooper (208 Johnston Hall)

Geography, Jan O. M. Broek (290B Ford Hall)

Geological Survey, George M. Schwartz (207 Pillsbury Hall)

Geology, George H. Thiel (108 Pillsbury Hall)

German, Frank H. Wood (210 Folwell Hall)

History, August C. Krey (242 Ford Hall)

International Relations and Area Studies, Harold Deutsch (250 Ford Hall)

Journalism, Ralph D. Casey (112 Murphy Hall)

Linguistics, _____ (116 Folwell Hall)

Mathematics, Raymond W. Brink (119 Folwell Hall)

Music, Paul M. Oberg (106 Scott Hall)

Philosophy, George P. Conger (100 Wesbrook Hall)

Physics, J. William Buchta (148 Physics Building)

Political Science, Harold S. Quigley (398 Ford Hall)

Psychology, Paul Meehl (112A Psychology Building)

Public Administration Center, Lloyd M. Short (354 Ford Hall)

Romance Languages, Francis B. Barton (200B Folwell Hall)

Scandinavian, Alrik Gustafson (13 Folwell Hall)

Social Work, John C. Kidneigh (400 Ford Hall)

Sociology, F. Stuart Chapin (439 Ford Hall)

Speech, E. William Ziebarth (309A Folwell Hall)

Zoology, Dwight E. Minnich (108 Zoology Building)

Section I

GENERAL INFORMATION

PURPOSE OF THE COLLEGE

The college offers a liberal education to students having the necessary ability and ambition. Through the liberal arts you can broaden your interests, develop your abilities, and prepare yourself for a life of useful service. The College of Science, Literature, and the Arts is the largest unit of the University primarily because it offers this broad, stimulating education so essential for personal development and for citizenship in a free society. In fulfillment of this function, the college can help you in four basic ways.

General Education—The purpose of general education is to help you take your place in contemporary society, whatever your occupation or major interest may be. It should contribute to your total efficiency both when employed and at leisure. More specifically, a sound, general education should enable you:

1. To understand other persons' ideas through reading and listening, and, in turn, to express your own ideas effectively to others.
2. To attain a balanced social and emotional adjustment through an understanding of human behavior, the enjoyment of social relationships, and the experience of working cooperatively with others.
3. To improve and maintain your own health and to make intelligent decisions about community health problems.
4. To acquire the knowledge and attitudes basic to a satisfying family life.
5. To participate as an active, responsible, and informed citizen in the discussion and solution of the social, economic, and political problems of American and international affairs.
6. To understand the fundamental discoveries of science in their implications for human welfare and in their influence on the development of thought and institutions; to understand and appreciate the scientific method and to use it in the solution of concrete problems.
7. To understand and enjoy literature, art, music, and other cultural activities as an expression of personal and social experience; and, if possible, to participate in some form of creative activity.
8. To develop a set of principles for the direction of personal and societal behavior through the recognition and critical examination of values involved in personal and social conduct.
9. To choose a socially useful and personally satisfying vocation that will enable you to utilize fully your particular interests and abilities.
10. To develop the ability to think critically and constructively. A sound educational program will provide manifold opportunities for reflective thinking in a wide range of intellectual and practical activities. Recognition should therefore be given this objective in conducting each course so that the development of this ability will become an integral and pervasive phase of learning in every field.*

Actually your general education has been developing since infancy and has already received considerable emphasis in high school. In college

* These objectives of general education are adapted from the *Minutes of the University Senate, May, 1944*.

you can round out and strengthen those qualities in which you still feel deficient and build a foundation for continued growth and development throughout life. Both the curricular subjects and extracurricular activities should contribute to your general educational growth, especially if you plan intelligently with a definite program in mind.

Vocational Exploration—This college will also give you experiences on which to base a wise choice of vocation. Since the college offers a wide variety of courses, you may test out several occupational possibilities before making a final decision. For example, if you are contemplating medicine you may try yourself in basic science courses to discover whether you have the proper abilities and interests. If you are thinking of business you might test yourself in Principles of Economics. By thus exploring various fields you will better understand your own abilities and be helped to a vocational decision, and at the same time you will be gaining a broad, liberal education. This experience can be supplemented by vocational counseling in the Student Counseling Bureau and by the course in "Choosing a Vocation."

Professional Training—If you are planning to enter a profession you will normally begin your preparation in this college. For some professions such as journalism, social work, or library science you may receive all your training in this college. For other professions such as law or medicine you will begin your work here and transfer to a professional school after two, three, or four years. Sections II and III of this bulletin will tell you about the various professional courses and requirements.

Special Interests—While in college you may wish to go on beyond the general education expected of all students and develop some special talent or interest. Such fields as music, art, foreign language, science, literature and public affairs are only a few of such interests. While these courses may not lead directly to vocational preparation, they can add much zest and meaning to life and may help you to become truly a liberally educated person.

ORGANIZATION OF THE COLLEGE

Upper and Lower Divisions—To help you attain the purposes outlined above, the College of Science, Literature, and the Arts is divided into a Junior and a Senior College. Each has a dean and college office as noted on page 2. In the Junior College, which embraces the freshman and sophomore classes, you will be encouraged to spread out your work in many fields to broaden your general education while at the same time taking any necessary preprofessional courses. Unless you transfer to a professional school, you will spend the last two years in the Senior College specializing in some field of interest while at the same time continuing your liberal education. The opportunities and requirements of both divisions are explained more fully in the following pages.

Departments—For purposes of instruction the college is divided into twenty-eight departments covering the three broad areas of the natural sciences, the social sciences, and the humanities. You will find the courses, instructors, and requirements of these departments listed in Section II of this bulletin.

SLA Intermediary Board—Students also have an important part in the college organization through the SLA Intermediary Board. This board is a representative group elected by the College of SLA student body to represent the students in discussions with the faculty concerning educational problems. Through this board the students are free to bring proposals for new courses, regulations, services, or any other matters affect-

ing their welfare. The board also nominates the student participants to the committee that deals with cheating and dishonesty.

The members of the SLA Intermediary Board for the year 1951-52 are: Don Anderson, Jaye Burke, Agnes Fall, Nancy James, Beatrice Johnson, John Kangas, Dean Roger B. Page, Mary Slaughter, Mary Thompson.

Other students often serve on board committees and if you are interested in such service you should go to the office of the SLA Intermediary Board, 215 Johnston Hall. The four standing committees deal with College Improvement, Student Personnel, Improvement of Instruction, and Curriculum.

ADMISSION REQUIREMENTS

You will find the requirements for admission to various colleges of the University listed in detail in the University's *Bulletin of General Information*.

Outlined below are the regulations for those who wish to be admitted to the College of Science, Literature, and the Arts. Different rules apply for high school graduates, students who did not finish high school, and those who transfer from other colleges.

High School Graduates—The basic entrance requirement is a college aptitude rating of at least forty. This rating is the average of one's percentile rank in the high school graduating class and the percentile rank among entering university freshmen achieved on the college aptitude test. The following combination of high school subjects must also be presented (except for veterans who are exempt from this pattern of course requirements):

1. At least 12 units (a unit is a one-year high school subject) must have been completed in Grades X, XI, and XII (senior high school) and these must include at least 9 units in standard subjects, that is, in Groups A to E listed below:

Group A: English

Group B: Foreign Languages (major or minor units must be in one language)

Group C: History and Social Sciences (major must include at least 2 units in history; a minor, at least 1 unit in history)

Group D: Mathematics

Group E: Natural Sciences (for major or minor in this group, not more than 2 half-unit courses may be included)

Group F: Vocational and Miscellaneous Subjects

2. Either one major (3 units in one admission group) and two minors (at least 2 units in one admission group) or preferably two majors and one minor must be presented including:

A major in Group A, English

A major or minor in Group D, Mathematics

In computing a major or a minor you may use 1 unit completed in Grade IX from either admission Group B (foreign languages) or admission Group D (mathematics) but not from both. If this is done, however, the unit completed in Grade IX may not be counted as part of the minimum of twelve credits required from Grades X, XI, and XII nor as part of the 9 units specified in Groups A through E.

If you were in the top 10 per cent of your high school class you will be admitted regardless of the pattern of your high school subjects or your college aptitude test score.

If you are a veteran with a high school equivalent certificate and hence no rank in a high school class, you will be admitted if you have a college scholastic aptitude test score placing you in a percentile rank of 40 or higher among entering university freshmen.

If you are a high school graduate and cannot meet the requirements stated above, you may be considered for admission by taking a series of tests. These tests are objective and are designed to measure aptitude for college work rather than specific information. Therefore, no special preparation for such tests is practicable. You should inquire of the Office of Admissions and Records for the procedures for taking these tests.

Non-High School Graduates—Provision has been made to consider for admission persons who have not been graduated from a high school but who show sufficient ability and maturity to do satisfactory work in college.

If you are over nineteen years of age you may be admitted if the score on your scholastic aptitude test gives you a percentile rank of 50 or higher among entering university freshmen.

If you are under nineteen, your admission will be considered on the following bases:

1. Scores received on a series of examinations.
2. Character of the high school record.
3. Judgment concerning your maturity and needs as expressed by your high school principal, parents, an all-university counselor, the dean of the college, and the dean of Admissions and Records. If there is a difference of opinion among these persons, the case will be reviewed by the Board of Admissions.

If you are applying for admission without graduation from high school, you should come to the campus for two or three days of testing and counseling several weeks before the beginning of the quarter you plan to enter. At that time you should file your application for admission, including your high school credits and the letters of recommendation from your high school principal and parents. These arrangements should be made with the Office of Admissions and Records.

Students Transferring from Another College—If you have completed work satisfactorily in another recognized college, you may be admitted to the College of SLA with advanced standing. Procedure for such admission is described in the University's *Bulletin of General Information*.

Credits which are accepted from other institutions may be used to satisfy requirements of this college. However, in determining your honor point ratio (page 20) only the grades that you earn in this University are considered. The grades earned in other colleges of the University, except General College, will carry the appropriate honor points provided the courses are recognized by this college. If you have any failures in recognized courses taken in other colleges of the University, these will also be transferred and you must make up any such honor point deficiency. General College grades are evaluated in the same manner as those received in other institutions.

You will be expected to maintain a C average in all the work of this college.

Admission of Veterans—Special procedures applying to the admission of veterans are described in detail in the *Bulletin of General Information*. Veterans should read those instructions carefully.

If you are a veteran, you may receive some credit for work completed in the service if proper military records are presented to the Office of Admissions and Records. Also, it is possible to earn some credit by taking G.E.D. tests (see page 22) if taken within two weeks after entering college.

Examinations for Advanced Standing Credit—If you believe yourself sufficiently prepared in some subjects to pass examinations in them upon entrance you may, with the approval of the Students' Work Committee, take such examinations without charge. You should apply to the chairman of the Students' Work Committee in 215 Johnston Hall. These examinations must be taken within the first six weeks of residence. For any subsequent examinations to gain credit, see page 22.

Adult Special Students—Special facilities are available for those students who wish a special and limited program and who are not candidates for a degree. If you seek admission as an adult special student you should ask for an application blank at the Office of Admissions and Records. The application must receive the approval of the dean of that office and of the Students' Work Committee of this college.

Ordinarily, to be accepted you must be twenty-four years of age or older or a person who has received a Bachelor's degree, and you must be seeking a special and limited course of study. If you are a veteran you may be admitted even though under twenty-four years of age if you have sound educational objectives and the requisite ability.

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

1. You may take any course for which you have the necessary prerequisites.
2. You cannot become a candidate for a degree without the approval of this college. After completing one full year of work (45 credits) with a C average, you may apply to the dean of Admissions and Records for regular classification.
3. No advanced standing will be allowed while you are classified as an adult special student.
4. You may audit courses according to the procedure described on page 17 of this bulletin.
5. Your registration each quarter must be approved by a representative of the Students' Work Committee.

STUDENT PERSONNEL SERVICES

Faculty Counselors—As you go through college you may need help with such matters as getting registered, selecting courses, choosing your vocation, arranging finances, entering student activities, or solving other personal problems. Much of this assistance is provided by the college but for some things you may wish to take advantage also of the all-university personnel services. You will be given the services of a faculty counselor as follows:

1. When you enter the college as a freshman or sophomore, a special counselor in the Junior College Counseling Office will go over your record and test scores with you and assist in planning a program of courses. If you are a freshman without previous college work, you will be given the name of your counselor for the remainder of the year. Feel free to go to him with any problem that arises. You may reach him through the Junior College Counseling Office, 220 Johnston Hall.

If at any time you decide to enter one of the following programs, you should report to 220 Johnston Hall for referral to a special counselor: Education, Journalism, Social Work, Medical and X-ray Technology, Music, Nursing, Occupational Therapy, and Physical Therapy.

If you have had previous college work, you will be assigned

to a faculty counselor chosen on the basis of your particular interests. Watch for his name on a card in your post-office box.

2. When you register for the fall quarter of your second year, you will have the opportunity to express a preference for your own faculty counselor. His name is sent to your post-office box soon after the quarter begins.
3. When you are a third-quarter sophomore and almost ready to enter the Senior College or a professional school, you should seek counsel from the Senior College Office or the professional school.
4. When you enter the Senior College you will be assigned a major adviser to help plan your work for the junior and senior years. This assignment is usually made in the departmental office of your major, though occasionally it is made in the Senior College Office.

Before going to see your college counselor, you should study the bulletin carefully and come with a tentative program and specific questions in mind. You should bring any records from the Office of Admissions and Records indicating credit already earned at this University or elsewhere.

Students' Work Committee—Almost every student has occasion from time to time to use the Students' Work Committee. It is important, therefore, that its functions be clearly understood.

What is it? It is a committee of the faculty charged with the interpretation and enforcement of faculty regulations. It is empowered also to make exceptions to faculty regulations when those regulations work to the educational disadvantage of a particular student, provided the basic spirit of the regulation is maintained.

Why should you be interested in it? Often a student is in doubt about his obligations or some rule seems to stand in the way of his objective. The Students' Work Committee is designed to help with such problems. It has special counselors available for consultation, and often an adjustment can be worked out.

How does one use it? When help is needed, go to your college office as indicated on page 2. A representative of the committee will be glad to talk with you. To be exempted from a regulation, you must prepare a written petition which is turned in at your college office. Since this process takes time, allow a few days for the committee's decision. Your copy will be returned to your post-office box with the action indicated.

Who makes up the committee? The three assistant deans of the college. Roger B. Page, the assistant dean for students' work, is chairman. The others are Russell M. Cooper, assistant dean for the Junior College, and J. W. Buchta, assistant dean for the Senior College. Miss Mable Powers of the Senior College and Mr. William Stevens of the Junior College attend the meetings and Mr. Stevens serves as secretary to the committee.

Student Scholastic Conduct Committee—If a student is charged with academic dishonesty, such as cheating or plagiarism, his case will be referred to the Student Scholastic Conduct Committee for judgment.

This committee is composed of five persons: the assistant dean for students' work serving as chairman, two students appointed by the dean of the college upon recommendation of the SLA College Intermediary Board, and two faculty members designated by the dean.

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

College Placement Services—The college offers what help it can in securing a job for you upon graduation. Many departments are aware of opportunities and you should ask their help. This departmental service is supplemented by a central placement service associated with the Senior College Office.

The central office attempts to help you appraise your assets and learn of job opportunities. You should register there two quarters before you expect to graduate. Placement cannot be guaranteed through these services but assistance is available to all.

Personnel Staff Offices—Approximately 300 faculty members participate in the college counseling program. Of these, about 120 are Senior College counselors of major students and they are listed under the appropriate departmental headings in Section II of this bulletin. The remaining counselors are for the Junior College and are assigned to students on a basis of congenial interests. To find the offices of these counselors, consult *Staff Address Book* or inquire at appropriate college office.

All-University Personnel Services—In addition to faculty counseling within the college, you are invited to use the several specialized personnel services provided by the University for all students. For example:

If you want professional help on a personal problem or vocational choice, go to the Student Counseling Bureau, 101 Eddy Hall.

To learn about student activities, visit the Student Activities Bureau at 209 Eddy Hall or the Student Union Program consultant in 229 Coffman Memorial Union.

If you need financial help, apply at the Bureau of Student Loans and Scholarships, 211 Eddy Hall.

For a part-time job on or off campus, apply at the Student Employment Office, 17 Administration Building.

For help in improving your reading or other study skills, use the Educational Skills Clinic, 101 Eddy Hall.

For aid with speech difficulties, consult the Speech and Hearing Clinic, 20 Shevelin Hall.

If you have any questions concerning veterans' benefits, go to the Bureau of Veterans' Affairs, 10 Shevelin Hall.

For help in finding a room or apartment, see the Student Housing Bureau, 204 Eddy Hall.

If you are a foreign student, by all means keep in contact with the Adviser for Foreign Students, 302 Eddy Hall.

If you have any health problems, go to the Students' Health Service, University Hospitals.

If you have any doubts concerning what service would be most appropriate, consult your faculty counselor or the Junior College Counseling Office.

JUNIOR COLLEGE PROGRAMS FOR ENTERING THE SENIOR COLLEGE

While your general education should continue into the Senior College, and indeed throughout life, this phase of development is especially emphasized in the Junior College. Together with any preprofessional work this will absorb at least two years of study.

Group Requirements—In order to assure you a reasonably broad, general education adapted to your particular backgrounds and needs, the following group requirements have been established. You will note that

these requirements contribute to the essential objectives of general education listed on page 4 of this bulletin. It is your job, in consultation with a faculty counselor, to determine which specific courses within these requirements will most effectively round out your development.

You should complete these group requirements during the two years in Junior College, and the Senior College years may then be devoted to fulfilling a major sequence and achieving a still stronger general and liberal education. Under some circumstances, you may be permitted to complete one or two group requirements after entering the Senior College.[†]

Two plans for fulfilling group requirements are provided and you should elect the one which better serves your needs. While you may change from one plan to another without any special permission, you must eventually complete all the requirements of one of them. In choosing your plan note carefully any special requirements of the department in which you expect to major. Under either plan you will have considerable opportunity for free electives.

PLAN I

A. English or Communication. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or Communication 1-2-3 (12 credits) or exemption from the requirement. All students are required to have an English Classification Card before registering for one of these courses. (See page 67.)

B. Foreign Language. From 0 to 20 credits, according to the following schedule:[§]

Amount Presented for Entrance	Amount Required in Junior College
Four years of one language	None
Three years of one language	5 credits in same language
Two years of one language	10 credits in same language
One year of one language	15 credits in same language
Less than a year of one language	20 credits in one language

C. Social Science. Ten credits* in one of the social sciences: anthropology, economics, geography, history, political science, sociology; or 12 credits in Social Science 1-2-3 (Introduction to Social Science)

D. Natural Science. Ten credits* in one of the natural sciences: astronomy, botany, chemistry, geology (laboratory is required), physics (laboratory is required), psychology (laboratory is required), zoology, or the general studies course in General Biology (Natural Science 7-8-9) or the Physical World (Natural Science 4-5-6); or 15 credits in Natural Science 1-2-3 (Orientation in the Natural Sciences)

E. Health. Public Health 3 (Personal Health, 2 credits) or equivalent.[¶]

PLAN II

A. English or Communication. English A-B-C (Freshman English, composition portion, 6 credits) or English 4-5-6 (Freshman Composition, 9 credits) or Communication 1-2-3 (12 credits) or exemption from the requirement. All students are required to have an English Classification Card before registration for one of these courses. (See page 67.)

C. Social Science. Eighteen credits selected from at least two of the following social science fields: anthropology, economics, geography, history, political science, psychology, sociology, or Social Science 1-2-3 (Introduction to Social Science)

* Or 9 credits in a year course or 9 credits (6 semester credits) of advanced standing.

† The group requirements for entering professional colleges are listed in Part III of this bulletin.

§ For students who enter this University with advanced standing, the number of credits required may be less than that indicated in this schedule. Any course of 9 credits (6 semester credits) may be substituted for the corresponding 10-credit course here.

¶ Public Health 3 is open for credit only to freshmen and sophomores. Public Health 50 is an acceptable substitute for juniors and seniors. Students may be excused from the requirement if they pass a special examination, covering health information, given each quarter at a time and place announced in the University's Official Daily Bulletin of the Minnesota Daily.

GENERAL INFORMATION

D. Natural Science. Eighteen credits selected from at least two of the following fields:

1. Biological science: botany, zoology, Natural Science 7-8-9 (General Biology)
2. Mathematics: any course above Math. 1
3. Natural Science 1-2-3 (Orientation in the Natural Sciences)
4. Physical science: astronomy, chemistry, geology (laboratory is required), physics (laboratory is required), Natural Science 4-5-6 (The Physical World)
5. Psychology: any course except Psy. A

E. Health. Public Health 3 (Personal Health, 2 credits) or equivalent.¶

F. Humanities. Eighteen credits selected from at least two of the following eight fields:

1. Art, music
2. Foreign language and literature: any course in Classics, German, Japanese, Linguistics, Romance Languages, Russian, Scandinavian
3. History
4. Humanities 1-2-3; Humanities 11-12-13; Humanities 21-22-23
5. Literature: English A-B-C (Freshman English, literature portion, 9 credits); American literature; English literature
6. Mathematics: any course above Math. 1
7. Philosophy
8. Speech

Work in a department listed in two groups (history, mathematics, or psychology) may be used in satisfying one group requirement but not both.

Prerequisites for Major—In planning your program, you must also take note of the Junior College prerequisite courses which should be taken in preparation for a Senior College departmental or interdepartmental major. The requirements for the various majors in the Senior College are described in Section II of this bulletin. As soon as you have settled upon your special interest, you should study these requirements carefully in order that you may take the necessary Junior College courses at the proper time.

Credits Required—For entrance into the Senior College, you must earn at least 84 credits (most students have 90) with a scholarship average of approximately C. Some of these credits may be "quality credits" as explained on page 20.

Sophomore Culture Tests—Early in the quarter before entering the Senior College you are required to take a standardized culture test. It is designed to measure your general background in history, literature, science, social science and the arts. While the scores are not used to determine admission, they will enable you and your adviser to plan your remaining program more intelligently, and the test must be taken before you may register in the Senior College of SLA.

The Sophomore Culture Tests are given the second and third Wednesdays and Thursdays of each quarter at a time and place announced in the Official Daily Bulletin.

Application for Entrance into Senior College—It is important that you enter the Senior College as soon as you are eligible in order that you may plan your further work with a major adviser and may properly fulfill the residence and other requirements of the Senior College. To encourage this transfer at the proper time, the assistant dean for the Senior College may, upon application, modify the entrance requirements with the understanding that they will be fulfilled later. You should apply for entrance at the Senior College early in the quarter in which you will complete 84 credits. It is essential that you bring a complete copy of your previous college record and that you have already taken the Sophomore Culture Test.

¶ Public Health 3 is open for credit only to freshmen and sophomores. Public Health 50 is an acceptable substitute for juniors and seniors. Students may be excused from the requirement if they pass a special examination, covering health information, given each quarter at a time and place announced in the University's Official Daily Bulletin or the Minnesota Daily.

Transfer Students—If you are entering the Senior College with advanced standing from some other institution, you must complete the same credit and group requirements expected of other students and must earn a C average while in this University. Honor points are not assigned to credits earned in other institutions or through tests for advanced standing.

THE TWO-YEAR PROGRAM FOR THE ASSOCIATE IN LIBERAL ARTS DEGREE

If you are not sure whether you can complete the four-year degree you may wish to apply for the two-year A.L.A. degree. It indicates the successful completion of a program devoted largely to general education. The requirements for the degree are as follows:

1. You must earn at least 90 credits, exclusive of quality credits. Honor points are not a factor in this degree.
2. You must earn the degree in not more than seven quarters of university residence. If you enter the college with advanced standing, you must spend the last three quarters before graduation in residence and must earn at least 45 of the required credits in residence.
3. You must meet the Group A requirement in English and at least two of the three group requirements: B, Foreign Language; C, Social Science; D, Natural Science, as outlined in Plan I, page 11.

If you meet these requirements you are eligible for the degree even though you should continue in the Senior College or a professional school. To make application, inquire at the Office of Admissions and Records.

SENIOR COLLEGE PROGRAMS LEADING TO THE BACHELOR OF ARTS DEGREE

Approval of Your Program—When you apply for admission to the Senior College you will be asked to attend an orientation meeting, at which time the policies and practices of the college will be explained. You will also be given an official folder on which you will be expected to list your proposed program of courses fulfilling the requirements for a B.A. degree. You may complete your first registration in Senior College before the folder is completed since in this way you will have sufficient time to discuss your proposed program with a major adviser. You should complete this program and turn it in at the Senior College Office as soon after your first registration as possible since you will not be allowed to register for a second quarter until your program is submitted. When thus approved by your major adviser and by the Senior College Office, the program becomes an agreement between you and the college and can be changed only by filing in the Senior College Office the written permission of your adviser.

In working out your Senior College program you will have wide freedom to choose courses particularly adapted to your purposes, though a few simple requirements must be observed. These are listed below. Be sure that your program will fulfill them.

Credits in Residence—Since most students enter the Senior College with approximately 90 credits, they must earn about 90 credits while in Senior College to complete the 180 required for graduation. All work taken in Senior College must be of at least C average quality.

Whether transferring from the Junior College or from some other college, you must earn a minimum of 45 credits and spend the last three quarters before graduation in residence in Senior College.

Major Sequence—While in the Senior College, 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 Senior College courses. Of the three types of sequences listed below, you should choose the one that best suits your purpose.

1. *A Departmental Major and Minor Sequence*—

- a. A departmental major (usually 27 to 36 credits) is offered in nearly every department of the college. The description of each major and its specific requirements are indicated for each department in Section II of this bulletin. You must maintain a C average in this major.
 - b. A minor sequence (15 credits) or two half-minors (9 credits each) must be taken in some department or departments other than that which you have chosen for your major. These minor credits must also be in Senior College courses.
 - c. Fifteen credit hours in Senior College courses outside the major and minor departments.
2. *An Interdepartmental or Liberal Arts Major*—If you believe 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 should submit a plan of courses to a counselor in the Senior College Office. Generally a program must include a minimum of 75 Senior College credits to be approved as an interdepartmental major.

The courses must be intelligently arranged around a central purpose and usually there will be concentrations in three or more departments. An unsystematic and purposeless scattering of courses will not be approved. You must maintain a C average in the Senior College courses.

A wide variety of study programs may be recognized on this basis. A few that have been elected so frequently that they have become standardized 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.

If your needs are so broad that they cannot be met by an interdepartmental major, you may wish to enter the University College. See Section III of this bulletin, page 158.

3. *A Major in a Combined Course*—A third type of concentration may be worked out in cooperation with a professional school. In this case, part of your work in the professional school may be applied back toward the Bachelor's degree from this college. Details of these courses are listed with the respective college programs in Section III of this bulletin. At least one year (45 credits) must be spent in residence in the Senior College and the usual C average must be maintained. The combinations are:

- a. Combined course in Arts and Law. Three years of work must be taken in the College of SLA and at least one additional year in the Law School.
- b. Combined course in Arts and Medicine. The first three years of work are taken in the College of SLA and the fourth year is taken in the Medical School.
- c. Combined course in Arts and Dentistry. The first three years of work are taken in the College of SLA and two additional years of work must be completed in the School of Dentistry.

- d. Four-year course leading to the degrees of graduate dental hygienist and bachelor of arts. The first two years are spent in the School of Dentistry and the last two in the College of SLA.

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

1. Required credits, 180. These may include both course credits and quality credits (see page 20).
2. Residence in the Senior College. Ordinarily a student will complete about 90 credit hours while he is in the Senior College. In any case he must earn 45 credits and spend his last three quarters in residence in Senior College.
3. Group requirements. All students must complete the group requirements under either Plan I or Plan II, preferably before entering the Senior College.
4. Major (field of concentration) and minors. Students must complete a departmental major and minor (or two half-minors) or an inter-departmental major or a combination course with a professional school. For those with a departmental major, 15 credits in Senior College courses are required outside the major and minor departments.
5. Quality of work. Students must earn a C average in all work completed, a C average while in Senior College, and a C average in the major (Senior College courses).

Graduation Honors—The Bachelor's degree may be awarded *cum laude*, *magna cum laude*, or *summa cum laude*. The principal requirements for the honors are indicated below but for more detailed information you should inquire in the Senior College Office.* To be eligible for consideration by the Committee on Honors, you must have fulfilled the academic requirements at the time of making application.

If you have entered the college with advanced standing, you may become a candidate for honors if you earn 60 credits of work in residence before graduation.

To be graduated *cum laude* you must:

1. Have a scholarship average of B or above in all your work and in all Senior College courses averaged separately.
2. Have earned at least 45 credits in this college after your admission to the Senior College.
3. Have a minimum of 60 credits, exclusive of quality credits, in Senior College courses. At least 6 of these should be in subjects outside the major and minor fields.

For the *magna cum laude* you must fulfill the above requirements and in addition:

1. Have a scholarship average of 2.25 or above in all your work and in your Senior College courses averaged separately.
2. Have a percentile rank above 60 in your total score on the Sophomore Culture Test and in three of its six parts.
3. Notify the Senior College Office of your intention to seek higher honors by at least the third quarter before graduation.

If you cannot satisfy these special *magna cum laude* requirements and yet have a general average of 2.15 or above, you may apply for a special oral examination to fulfill the requirements.

* Honors are awarded upon complete records including the work of the final quarter before graduation. If any student believes that his record in the final quarter may alter his status as a candidate for higher honors he should consult the chairman of the Committee on Honors.

GENERAL INFORMATION

For a *summa cum laude* you must fulfill all the requirements for the other two honors and in addition:

1. Have a scholarship average of 2.40 or higher in all your work and in your Senior College courses averaged separately.
2. Take an oral examination which may range outside your special field of study. It is designed to measure your capacity for self-education as indicated by your curiosity about subjects of general interest and your voluntary attempt to inform yourself concerning them.
3. Write a *summa* thesis demonstrating distinguished talent or ability. Please consult the chairman of the Committee on Honors, Dean Buchta, before writing this thesis.

REGISTRATION PROCEDURES

Registration enables you to sign for the particular courses you will take for the coming quarter. It encourages you to re-examine your educational goal in light of your activities both in and outside the classroom.

If you are a new student, be sure to obtain your admission certificate from the Office of Admissions and Records in the Administration Building before seeking to register. At registration time you will also be given a health examination, a speech examination, and certain tests to assist you later in educational planning.

The college will issue printed instructions with the registration materials and if you follow these carefully the process will be relatively simple.

Registration Dates—Registration begins several weeks before the opening of the quarter and is announced in the Official Daily Bulletin of the *Minnesota Daily*. The expiration date is listed in the University Calendar which is included in the *Class Schedule* and the University's *Bulletin of General Information*. Only in exceptional circumstances may you register after that date and then you must pay a special privilege fee.

The fee for the privilege of late registration or for the late payment of fees is \$2 through the third day of classes and then increases 50 cents per day to a maximum of \$5.

Change of Registration—If you have planned your program carefully you will seldom need to change a course after completing registration. However, if a change should occasionally become necessary the procedure is as follows: Junior College students should fill out a "Cancel-Add" form obtained in the Junior College Counseling Office, have it signed by a counselor and tally it in the Tally Office. Juniors and seniors should get their cancel-add forms from their Senior College Office and have the changes approved by that office before tallying.

The addition of a new course after the first week of classes must be approved by a representative of the Students' Work Committee and normally it is not permitted.

Courses may be canceled without grade during the first six weeks of classes, although if the total load falls below 13 credits, the approval of the Students' Work Committee is required. After the six weeks, cancellation of a course in which you are failing is recorded as "cancellation with F"; if you are passing, it is recorded "cancellation with no grade." During the last two weeks before the beginning of final examinations, cancellation is not permitted except under most unusual circumstances.

Maximum and Minimum Credits per Quarter—You must elect at least 13 credits of work each quarter. To take less than that number you must secure permission from the Students' Work Committee. (Note that

the U. S. Veterans Administration will pay full compensation only to veterans taking 12 or more credits of work each quarter.)

The maximum number of credits for which you may register is ordinarily 17. After two quarters of residence you may register for 18 credits provided you have a scholarship average of 1.5 for the two quarters before registration, and no failure for the quarter immediately preceding registration. Registration for credits in excess of these limits must be approved by the Students' Work Committee.

Junior and Senior College Courses—Junior College courses (numbered 1 to 49) are intended primarily for freshmen and sophomores, and Senior College courses (numbered 50 and above) are intended primarily for juniors and seniors. However, it is possible for Junior College students to take advanced courses and for Senior College students to take elementary courses when the arrangement is clearly to the student's educational advantage, as explained on page 24.

Registration for Courses in Other Colleges of the University—All courses offered in other colleges that are regularly open to students of this college 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 will carry credit in this college only by permission of the Students' Work Committee.

In the senior year, any student registered in the College of SLA may elect not more than 6 credits per quarter in any other college or school of this University, provided that (1) the dean of the college or school in question and the Students' Work Committee of this college approve the courses as suitable for such election; and (2) no duplication of subjects occurs. Such courses are counted toward the bachelor of arts degree on the same terms as those taken in the College of SLA. If you are a senior wishing further information about these courses, you should consult a counselor in the Senior College Office.

Courses in the General Extension Division—If you are enrolled in the College of SLA you may take courses in the General Extension Division with permission of the Students' Work Committee, and acceptable credits in those courses may be transferred to this college upon your application to the Office of Admissions and Records.

Credit in the Graduate School—If you are lacking not more than nine credits toward 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 assistant dean for the Senior College, an undergraduate lacking not more than six credits toward graduation may be registered in the Graduate School while completing his requirements for the Bachelor's degree.

Courses without Credit—Under certain circumstances you may register for a course without credit, with the permission of the Students' Work 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 honor points do not count in computing honor point ratios in the college. The procedure is particularly useful for returning students who may wish to repeat a course for review. (The arrangement corresponds to the Audit Type I of the U. S. Veterans Administration.)

Audited Courses—Auditing a course differs from taking it without

credit in that the student may not participate in the activities of the class nor take the final examination, and no grade is recorded. A student may not later receive credit for a course which he has audited. Normally you will be permitted to audit only in case you are a Senior College or adult special student and then under the following conditions:

1. You must get an auditor's card at the Senior College Office and have it approved in writing by the instructor in charge of the course as well as by your major adviser. (Adult special students go to 214 Johnston Hall.)
2. You must present the card to the recorder and pay the usual fee for regular membership in the course.
3. Your total load, including the audited course, must not exceed the maximum of seventeen or eighteen credit hours unless you have a B average, in which case you may audit an additional three-credit course.

(This arrangement corresponds to the Audit Type II of the U. S. Veterans Administration.)

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

You may not repeat a course for which you have received credit without permission of the Students' Work Committee. If this permission is granted, you essentially will be taking the course without credit as described above. The grade will be recorded but the credit and honor points will not count in computing honor point ratios.

Repeating a High School Course—Ordinarily a student should register in the college course in mathematics or language for which his high school units in these subjects make him eligible. If for any reason he feels that he is not equipped to take that level of college course, he should consult with the appropriate department chairman about the possibility of being assigned to a course which repeats what he had in high school. If this repetition is approved by the department chairman and the Students' Work Committee, credit will be allowed. No approval is necessary for a student who has had high school trigonometry and wishes to take trigonometry (Math. 6) in college.

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

Canceling out of College—If you should wish to cancel out of college during a quarter or plan not to return in the succeeding quarter, you should report to the College of SLA window in the Administration Building (Window 13) 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 college counseling office, since members of the college staff are interested in being of any assistance possible. You probably will want to discuss one or more of the following topics: academic standing in the college and possibilities of return or transfer, grades to be awarded, wisdom of the decision to cancel, financial needs, job placement, and others.

If you are likely to enter the armed services upon leaving college, you will find the discussion especially important. The college prepares a summary of your academic and extracurricular background for your use in seeking proper placement in the services.

COLLEGE REGULATIONS

Petition for Exemption from College Regulations—The faculty has set up certain regulations to help students achieve a good education. These rules are believed wise for most students but occasionally they may work to the educational disadvantage of a particular person. In this event, he may ask for an exemption in his case through a petition to the Students' Work Committee. The committee is empowered to make exceptions to a requirement provided the exceptions are consistent with the spirit of the rule.

Regular petition blanks are available in the Students' Work Committee offices of the Junior and Senior Colleges. A college counselor's endorsement should be secured if appropriate. If necessary, the student will be given an opportunity to present his case in person. When the committee has taken action, the reply will be mailed to the student's university post-office box in Coffman Memorial Union.

Registration Regulations—Special rules pertaining to registration procedures are discussed in the 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 Senior College. A student in Senior College who has less than 135 credits is a junior; one with 135 or more credits is a senior.

Credits—Amount of work expressed in *credits*. Each credit demands, on the average, three hours a week of a student's time; that is, one recitation with two hours of preparation, or three hours of laboratory work.

Grades—Four passing grades, A (highest), B, C, and D (lowest), are given. They are all acceptable for the completion of a single course. Work completed with the grade D is counted toward graduation when combined with work of A or B grade in other courses. The grade C indicates work of the quality required for graduation in most curricula; the grades B and A are given for work of higher degrees of excellence. The grade F (failure) is given for work which in the opinion of the instructor does not deserve college credit.

The grade I (incomplete) is a temporary grade indicating that a student has a satisfactory record in work completed but for reasons satisfactory to the instructor in charge was unable to complete the work of the course. In case of doubt about a student's eligibility to receive an I, the question should be referred to the Students' Work Committee. A student receiving this grade is required to complete the work of the course within the first thirty days of his next quarter (except summer) in residence or it will be marked canceled without grade. An extension of time may be permitted for removal of an incomplete grade upon the recommendation of the instructor concerned and the approval of the Students' Work Committee. In such cases removal of the incomplete will be considered a special examination for which the special examination fee will be charged.

The symbol X signifies that work in a continuation course is satisfactory and that a grade will be assigned when the entire course is completed. The symbol Y indicates that the student dropped out of the course while doing passing work but without following proper cancellation procedure. If a student receives a Y, he should contact the Students' Work Committee immediately. The symbol Z is given when the student withdraws after the sixth week while doing failing work and counts as an F.

Honor Points—Quality of work is indicated by *honor points*. Honor points are assigned to the various grades on the assumption that in most curricula a C average is required for graduation. Each credit with the grade of C carries one honor point; each credit with the grade of B, two

honor points; each credit with the grade of A, three honor points. The grades of D and F carry no honor points.

Honor Point Ratio—A student's scholarship average is defined as the number of earned honor points divided by the total number of credits earned and failed. Scholarship averages of 1, 2, and 3 are called C, B, and A averages, respectively. Failures in courses taken before June 16, 1943 will not be counted in computing scholarship averages.

For satisfactory progress in most of the courses of study offered in this college, a student must maintain a scholarship average of at least C. By maintaining a better average in the Junior College, he may be able to reduce the amount of work which he is required to complete. (See paragraph, Quality Credits, below.)

Quality Credits—As special recognition of superior work in the Junior College, quality credits are awarded on the basis of one credit for every five honor points above a C average. These credits may be applied toward graduation but are not used to satisfy group requirements, major or minor requirements, residence requirements, or specific required courses. Moreover, they may be earned only on work in this University, exclusive of General College.

Quality credits are available to all students through the quarter in which 84 credits (course and quality) are accumulated. After that time, additional quality credits are available only to veterans or to students who have been in continuous residence since the spring term or Summer Session of 1946. Senior College students who are eligible for quality credits may earn them only in Senior College courses.

The acceptance of quality credits by the College of Education, the School of Business Administration, and the schools in the College of Medical Sciences may be determined through reference to Section III of this bulletin.

The following example will illustrate the method of computing quality credits: Suppose a student has 10 course credits of A, 20 of B, 12 of C, 8 of D, and 5 of F. For the A grades, he has earned 30 honor points or 20 above a C average. For the B's, he has earned 20 points above a C average. The C's gained him nothing and he lost 13 honor points for his D's and F's. He therefore has $20 + 20 - 13$ or 27 honor points above a C average, yielding a total of 5 quality credits. (Figured another way: If he adds the honor points, he gets 30 for the A grades, 40 for the B's, 12 for the C's, 0 for the D's and 0 for the F's, or a total of 82. This sum diminished by the 55 credits attempted yields a remainder of 27 honor points above a C average. When 27 is divided by 5, the total of 5 quality credits is earned.)

Satisfactory Progress—A student in this college is expected to make satisfactory progress in the curriculum he has selected. For those who are candidates for a Bachelor's degree, this is interpreted to mean a C average. The cases of students who are not reaching this standard are considered by the Students' Work Committee.

During the quarter, instructors report to the committee the names of students who are likely to fail. These students are referred to a special counselor to discuss their situation and to see what may be done to help them. It is always best for a student to see his class instructor or his faculty counselor as soon as he feels himself in difficulty rather than to wait until he has already received a poor grade.

Probation—When the grades at the end of a quarter indicate that a student is in serious scholastic difficulty, he is placed on probation. While on this status he is afforded special aid in discovering the reasons for his difficulty and in finding ways of overcoming it. He is usually given at least one quarter to show improvement. In any case the probation period will not be extended beyond two quarters unless the Students' Work

Committee is convinced that the causes of the student's poor work are beyond his control and will soon disappear.

If a student is placed on "strict probation," he may expect to be dropped at the end of the current quarter unless he fully achieves a specified quality of work.

The probationary status indicates serious doubt whether the student will succeed in college. While poor grades are a primary factor in determining this status, a record of continuous cancellations and incompletes likewise indicates scholastic weakness.

A Junior College student will always be placed on probation if the following conditions arise:

1. Failing grades in at least half his work for any quarter.
2. An honor point ratio under .50 at the end of two quarters.
3. An honor point ratio under .60 at the end of three quarters.
4. An honor point ratio under .70 at the end of four quarters.
5. An honor point ratio under .75 at the end of five quarters.
6. An honor point ratio under .80 at the end of six or seven quarters.

A student in the Senior College will be placed on probation if:

1. He is admitted from the Junior College with an average of less than one honor point per credit.
2. If at any time he is nine or more honor points below a C average.

When the student's work improves to a point where he is again making normal progress toward a degree, he will be notified of his removal from probationary status.

Exclusion from College—Students excluded from the college shall be recorded as (1) transferred, (2) discontinued, (3) dropped.

1. **Transferred**—If a student's attitude toward his work is satisfactory but he evidently is not following a curriculum appropriate for him, he may be transferred to another college at the end of any quarter with the approval of the two colleges concerned.
2. **Discontinued**—If a student is pursuing an appropriate course but is handicapped by conditions he cannot control (ill health, necessary outside work, 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 are recorded as canceled without grade.
3. **Dropped**—A student who has failed to meet the terms of his probation shall be dropped.

Readmission to College—Students excluded from college are allowed to return only with the permission of the Students' Work Committee.

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

A student who has been dropped may petition for readmission after an interval of one year. The petition must present specific evidence that he is now likely to succeed with college work.

Extension courses or work in another college, taken while a student is excluded from this college, will not be recognized for eventual credit in this college unless the student obtains permission from the Students' Work Committee prior to registration for such courses.

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 college has a responsibility for class attendance. Only absences with good reason (such as illness for which a Health Service excuse is obtained) are legitimate. The faculty delegates the handling of absences to the various departments, to be dealt with under the assumption that every student is expected to do the full work of the class. Since the departments have different ways of treating absences, the student must familiarize himself with the method of each department in which he is taking work.

To obtain an official excuse he should go to the appropriate Junior or Senior College Office.

Final Examinations—The all-university final examination schedule is published each quarter in the Official Daily Bulletin of the *Minnesota Daily* well in advance of the examination period. Students are required to take examinations at the scheduled time. However, if the student has a conflict in examinations or if he has three examinations in one day, he should report that fact to the Junior College Office in 208 Johnston Hall for possible adjustment.

If a student misses a final examination without being excused, a Y symbol is assigned if he was doing passing work and a Z if he was failing. If he can show good reason for the absence, he may petition the Students' Work Committee for substitution of a grade of incomplete that can be made up.

Examinations for Credit—Credit for material mastered outside of class 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 Students' Work Committee for a special examination. If approved, the committee will appoint a special faculty committee to administer the examination. Unless the Students' Work Committee directs otherwise, the fee for such examination will be \$5. (Note that entering students may take examinations for advanced standing without payment of a fee, page 8.)

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 Students' Work 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.

Credit to Veterans for General Educational Development Tests—In recognition of the important educational values attained by many veterans while in service, this college affords veterans the opportunity to secure academic credit by passing General Educational Development tests. These tests are administered by the Student Counseling Bureau and cover the following four fields: (1) Composition; (2) Social Science; (3) Natural Science; (4) Literature.

Veterans should take these tests before reporting to the college for registration. In any event, they must be taken within two weeks after classes begin, at a time and place announced in the Official Daily Bulletin of the *Minnesota Daily*.

While a maximum of nine credits will be allowed for each G.E.D. test, this amount will be reduced by the number of college credits already earned in that general field. This regulation insures that credit will be allowed only once for the same learning. A student passing the G.E.D. tests will receive credit for any course he later takes except for the following which are designed to cover the same material: Test 1. Composition 4-5-6 and the composition part of English A-B-C, or Communi-

cation 1-2-3; Test 3. Orientation in the Natural Sciences; Test 4. Literature portion of English A-B-C. Test 2 has no equivalent course.

In using these credits to help satisfy group requirements (see page 10), Test 1 relates to Group A, Test 2 to Group C, Test 3 to Group D, and Test 4 to Group E.

All veterans will wish to read carefully the *Bulletin of General Information* which explains credit policies applying to work done while in service.

Courses in General Extension Division—A student who takes courses in General Extension Division classes in St. Paul, Minneapolis, or Duluth and wishes to count them toward a Bachelor's degree given by the College of Science, Literature, and the Arts must meet all curricular requirements of this college as stated in this bulletin.

1. Before beginning work in the Senior College with a view to graduation, the student must apply for Senior College standing and be enrolled by the assistant dean for the Senior College.
2. He will be assigned to a Senior College adviser and must complete all the Senior College studies under the direction of the adviser.
3. He must complete any required work, either of major or minor sequences or of any other nature, in this college if it is not offered in the General Extension Division.

For the adjustment of irregularities in his curriculum the student may get advice from the assistant dean for the Senior College or from his major adviser.

A student who does not conform to these regulations may apply for standing in the Senior College on the same terms as a student transferred from some other institution.

Students who have not taken class work in one of the cities named must meet both curricular and residence requirements.

Work taken in correspondence may be applied toward a degree though not more than three credits may count toward a major in the Senior College. Correspondence credits are not regarded as credits earned in residence.

FEES

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

SCHOLARSHIPS AND AWARDS IN THIS COLLEGE

In addition to the all-university aids available through the Bureau of Student Loans and Scholarships, 211 Eddy Hall, there are a number of scholarships and awards given by the following departments: Art, Classics, English, German, History, Journalism, Library Science, Music, Political Science, Scandinavian Area Studies, Sociology, and Speech, as well as the SLA College Offices. Students seeking further information concerning these awards should apply directly to the departmental office concerned.

Section II

COURSE OFFERINGS AND MAJOR REQUIREMENTS

College of Science, Literature, and the Arts

EXPLANATIONS

Course numbering—A course is designated by a department name, a number and a letter. It has the same number in whatever quarter it is offered. The quarter is indicated by letter (f, fall; w, winter; s, spring; su, summer).

Examples:

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

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

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

† All parts of a course preceding the dagger must be completed before you receive credit for any part. (In 1f-2w†-3s, the first two quarters must be completed, while the third is optional.)

— A course sequence separated by hyphens (1f-2w-3s) must be taken in the order listed unless it is specifically stated that a student may enter any quarter.

Statement of credits—The number of credits stated for two- and three-quarter courses is the number for the entire course, not the number for each quarter unless so stated.

Class hour schedule—The I hour is from 8:00-8:50, the II hour from 9:00-9:50, and so on throughout the day. The classes on the St. Paul Campus start and end 15 minutes earlier than those on the Minneapolis Campus.

Days and hours—MTWThF indicates that the class meets on Monday, Tuesday, Wednesday, Thursday, and Friday, while MWF means that the class meets on Monday, Wednesday, and Friday only. When a class is designated as meeting I-III MWF it will meet I through III hour, the dash always indicating *through*, while I,III MWF indicates that it meets I and III but not II hour.

When there is more than one section of the same course, the sections are separated by semicolons. Example: I MWF; III TThS; VI MWF. This indicates there are three sections of the course meeting at 8:00 o'clock MWF, 10:00 o'clock TThS, and 1:00 o'clock MWF respectively.

Junior and Senior College courses—This college distinguishes between Junior College courses, intended primarily for freshmen and sophomores, and Senior College courses, intended primarily for juniors and seniors.

Senior College courses numbered between 50-99 appear in the announcement as open to "juniors and seniors" while those numbered between 100-199 are open to "juniors, seniors, and graduates."

Most Senior College courses numbered between 50-99 are usually open to sophomores who have an average grade of at least C in the prerequisite courses. They are listed beneath the heading Senior College Courses in departmental statements in this bulletin. Senior College courses numbered between 100-199 are open to third-quarter sophomores by special permission of the Students' Work Committee. The committee will usually grant such permission to students who have an average grade of

at least C in all their work and in the prerequisite courses. Requests for the special permission should be presented to the Junior College Office, Johnston Hall.

AIR SCIENCE AND TACTICS

Air ROTC

Department chairman—Major Walter H. Grierson.

The program in Air Science and Tactics, United States Air Force, leading to a commission in the Air Force Officers Reserve Corps, is available for students in the College of Science, Literature, and the Arts as well as for those in other colleges of the University. For information concerning the requirements and the opportunities in this program, consult the *Bulletin of General Information* and the *Bulletin of the University of Minnesota ROTC*.

The College of Science, Literature, and the Arts will accept credits from basic and advanced courses in Air Science and Tactics, to fulfill a minor toward the B.A. degree.

PROGRAM OF AIR FORCE SCIENCE AND TACTICS

Basic Courses

- A.S.31f. Air Science I** (1 cred.; no prereq.) II MWF; III MWF; IV MWF; VI MWF; VII MWF; VIII MWF
- A.S.32w. Air Science I** (1 cred.; prereq. 31) II MWF; III MWF; IV MWF; VI MWF; VII MWF; VIII MWF
- A.S.33s. Air Science I** (1 cred.; prereq. 32) IX-X T and one of the following sections: II M; III M; IV M; VI M; VII M; VIII M
- A.S.34f. Air Science II** (1 cred.; prereq. 33) II MWF; III MWF; IV MWF; VI MWF; VII MWF; VIII MWF
- A.S.35w. Air Science II** (1 cred.; prereq. 34) II MWF; III MWF; IV MWF; VI MWF; VII MWF; VIII MWF
- A.S.36s. Air Science II** (1 cred.; prereq. 35) IX-X T and one of the following sections: II M; III M; IV M; VI M; VII M; VIII M

Advanced Courses

- A.S.131f. Air Science III** (3 cred.; prereq. 36) I MTWThF; IV MTWThF; VII MTWThF
- A.S.132Aw. Air Science III. Supply and Administration** (3 cred.; prereq. 131) I MTWThF, IV MTWThF; VII MTWThF
- A.S.132Bw. Air Science III. Communications** (3 cred.; prereq. 131) I MTWThF; IV MTWThF
- A.S.133As. Air Science III. Supply and Administration** (3 cred.; prereq. 132A) IX-X T and one of the following sections: I MWF; IV MWF; VII MWF
- A.S.133Bs. Air Science III. Communications** (3 cred.; prereq. 132B) IX-X T and one of the following sections: I MWF; IV MWF
- A.S.134f. Air Science IV.** (3 cred.; prereq. 133A or 133B) II MTWThF; III MTWThF; VI MTWThF
- A.S.135Aw. Air Science IV. Supply and Administration** (3 cred.; prereq. 134) II MTWThF; III MTWThF; VI MTWThF
- A.S.135Bw. Air Science IV. Communications** (3 cred.; prereq. 134) II MTWThF; VI MTWThF
- A.S.136As. Air Science IV. Supply and Administration** (3 cred.; prereq. 135A) IX-X T and one of the following sections: II MWF; III MWF; VI MWF
- A.S.136Bs. Air Science IV. Communications** (3 cred.; prereq. 135B) IX-X T and one of the following sections: II MWF; VI MWF

AMERICAN STUDIES

Department chairman—Tremaine McDowell

Major advisers in the College of Science, Literature, and the Arts—Professors McDowell, Christensen, and Lowry Nelson; Associate Professor Tyler; Assistant Professors Turpie and Bowron.

A major in American Studies is offered to students under the general provisions of an interdepartmental (or liberal arts) major as stated on page 14. The Senior College courses which constitute this major will include 48 credits in courses concerned with civilization in the United States as follows:

- A. 42 credits in approved courses in the four fields named below, including at least 9 credits in each field: American history; American literature; American art and philosophy; social sciences in the United States.

- B. 6 credits in American Studies 90-91-92.

(Prerequisite: Hum. 21-22-23, "American Life," or Hum. 71-72-73, "Humanities in the United States.")

Junior College Courses

Hum.21f. American Life I (Formerly Hum. 22) (3 cred.; no prereq.) II MWF Kwiat; III MWF Davies; IV MWF Bowron and others; VII MWF Turpie

Hum.22w. American Life II (Formerly Hum. 23) (3 cred.; no prereq.) II MWF Kwiat; III MWF Davies; IV MWF Bowron and others; VII MWF Turpie

Hum.23s. American Life III (Formerly Hum. 21) (3 cred.; no prereq.) II MWF Kwiat; III MWF Davies; IV MWF Bowron and others; VII MWF Turpie

Senior College Courses

Hum.71f-72w-73s.* Humanities in the United States. A student may not receive credit for any quarter of this course if he has completed the corresponding quarter of Hum. 21-22-23 (9 cred.; jr., sr.; no prereq.) VII MWF Marx

90f-91w-92s. Proseminar in American Studies. Conferences and readings correlating the students' work in American civilization (6 cred.; sr.; prereq. consent of instructor) VIII-IX T Bowron

For Graduate Students Only

200f-201w-202s. Introduction to American Studies. Exposition of interdisciplinary methods and of the concept of American Studies; reading of classics in American civilization; extended exploration of a selected topic. Limited to candidates for the M.A. degree in American Studies (6 cred.; grad.) VIII-IX T McDowell and staff

210f-211w-212s. Seminar in American Studies. An over-view of American civilization in the terms of the various departments which cooperate in the program in American Studies; for doctoral candidates (9 cred.; grad.; prereq. consent of instructor) VIII-IX W Hornberger (f), Smith (w,s)

250f-251w-252s. Readings in American Civilization. Independent study of interdisciplinary aspects of American civilization under guidance of members of various departments (Cred. ar.; grad.; prereq. consent of department chairman) Ar. Ar. Ar.

For courses in the participating departments (History, English, Philosophy, Sociology, etc.) which are accepted for the B.A., the M.A., or the Ph.D. degree in American Studies, see the *Bulletin of the Program in American Studies*.

* Students may enter any quarter.

ANATOMY (HUMAN)

College of Medical Sciences

Department head—Edward A. Boyden

For complete list of courses, see the *Bulletin of the Medical School*.

Students in this college may elect courses in human anatomy other than Course 3 or 4 (see the *Bulletin of the Medical School*) only by arrangement with the head of the Department of Anatomy and the S.L.A. Students' Work Committee.

- 3s. Elementary Anatomy** (4 cred.; primarily for 3-yr. nurses (Extension Division) and dental hygienists*; no prereq.) Lect. and quiz I TThS, lab. and rec. VIII-IX T; VIII-IX Th Cornwell
- 4s. Elementary Anatomy** (5 cred.; primarily for 5-yr. nurses and med. techs.; prereq. Zool. 1-2-3 or 14-15) Lect. and quiz I MTWF; lab. and rec. VIII-IX TTh Cornwell

ANTHROPOLOGY

Department head—Wilson D. Wallis

Major adviser in the College of Science, Literature, and the Arts—Professor Wallis; Assistant Professors Kelly and Spencer.

Major sequence in the College of Science, Literature, and the Arts—At least 27 credits of anthropology courses numbered 80 or over, or 18 credits of anthropology courses numbered 80 or over and Zool. 83, 170, and 171. (This latter sequence suggested only for those with strong interest in physical anthropology.)

(Prerequisites: Courses 1 and 2 (or the old Courses 40 and 42) with fifteen additional credits from either the social or biological sciences.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Junior College Courses

1f. Introduction to Anthropology. Man's physical and cultural development; the nature and significance of race differences; ways of life in primitive society; applications of anthropology to modern life. This course treats the material topically while Anth. 2 organizes it according to the principal regions and cultures of the world (Formerly Course 40) (5 cred.; no prereq.) VI MTWThF Kelly

1w. Introduction to Anthropology (See 1f) VII MTWThF Wallis

2w. Introduction to World Ethnology. Man's first appearance in Old and New Worlds; earliest stages in the development of civilization; discovery and invention, the formation of cultural patterns, and the spread and adaptation of culture to various environments in Asia, Africa, the South Seas, and among the American Indians; changes in the arts, beliefs, and institutions of primitive communities as observed in recent times (Formerly Course 42) (5 cred.; no prereq.) VI MTWThF Kelly

2s. Introduction to World Ethnology (See 2w) VII MTWThF Spencer

Senior College Courses

Courses 54, 56, 80, 81 are open to sophomores who have a grade of at least C in Courses 1 (the old Course 40) or 2 (the old Course 42). Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

54f. Social Organization. An analysis and survey of forms of social life (3 cred.; jr., sr.; no prereq.) I MWF Wallis

56s. Primitive Science. The beliefs and knowledge of primitive man (3 cred.; jr., sr.; no prereq.) III MWF Wallis

* Admission of other students to this course is permissible only by arrangement with the head of the department. Anatomy 4s is recommended in its place.

28 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 80w. **The American Indian.** A survey of native cultures of the New World. Physical and cultural characteristics (3 cred.; jr., sr.; no prereq.) IV MWF Spencer
- 81w. **Archeology of North America.** Prehistory of the region, with special attention to northern Mexico and the United States (3 cred.; jr., sr.; no prereq.) III MWF Wilford
105. **Elements of Language.** A survey of speech sounds followed by practice in phonetic recording. Analysis of phonetic patterns in language. Practical work in dictation of Chippewa, Dakota, Finnish, and other languages (3 cred.; jr., sr., grad.; no prereq.) (Not offered in 1951-52)
106. **European Prehistory.** Human evolution and the spread of cultures through the Old World during the pleistocene. The development and spread of civilization in the Near East and Europe during prehistoric times (3 cred.; jr., sr., grad.; no prereq.) (Not offered in 1951-52)
- 109f. **General Linguistics.** Problems relating to phonetic patterning, morphology, syntax, and semantics of language; attention directed to the varieties of language structures found outside of our own speech family (4 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language) II MWF and VIII-X T Spencer
- 110f. **Physical Anthropology.** Man's place in the animal kingdom. Comparison of man's structure with that of the anthropoid apes; types of prehistoric men; antropometry (3 cred.; jr., sr., grad.; no prereq.) III MWF Wilford
- 111w. **Advanced Physical Anthropology.** Sex differences; asymmetry; variability; statistical procedures; problems of race (3 cred.; jr., sr., grad.; prereq. 110, or Zool. 22 or 175, or a course in human anatomy, or permission of instructor) II MWF Wallis
- 113f. **The Character of Cultures.** Culture patterns, elements, and complexes (3 cred.; jr., sr., grad.; no prereq.) VII MWF Wallis
- 116s. **Indians of the Southwest.** The pueblo dwellers, Navaho, Apache, and other aborigines of New Mexico and Arizona. The ancient civilizations of the region (3 cred.; jr., sr., grad.; no prereq.) III TThS Kelly
- 117s. **Anthropology and Contemporary Problems.** Significance of the comparative study of human societies for understanding contemporary problems (3 cred.; jr., sr., grad.; no prereq.) IV MWF Kelly
- 118w. **Indian Civilizations of Mexico and Central America.** Pre-Spanish history, mostly from archeology, of the more advanced cultures of Mexico and Central America (3 cred.; jr., sr., grad.; no prereq.) VII MWF Kelly
- 119s. **The Contact of Cultures.** An examination of the ways in which customs change, especially as exemplified by the impact of Western civilization on native societies (3 cred.; jr., sr., grad.; no prereq.) II MWF Wallis
120. **Indians of the Plains.** The aboriginal inhabitants of the prairies and plains. The tribes which lived between the Upper Mississippi and the Rockies, from the forests of western Canada to Texas (3 cred.; jr., sr., grad.; no prereq.) (Not offered in 1951-52)
- 122f-123w-124s. **Problems in Anthropology.** (Cred. ar.; jr., sr., grad.; prereq. permission of instructor) Ar. Ar. Wallis, Wilford, Spencer, Kelly
125. **The Peoples of Southeast Asia and Indonesia.** Cultural achievements of the peoples of Burma, Siam, French Indo-China, and the Malaysian archipelago. Influences from India on the native cultures of the area; influence of Islam on the Indonesian realm. Modern ethnic, national, and colonial problems (3 cred.; jr., sr., grad.; no prereq.) (Not offered in 1951-52)
- 126f. **Ethnology of India.** A survey of the primitive tribes, Hindu caste society, and the Mohammedan communities in India (3 cred.; jr., sr., grad.; no prereq.) IV TThS Spencer
- 127w. **Races and Cultures of China** (3 cred.; jr., sr., grad.; no prereq.) IV TThS Spencer
- 128s. **Races and Cultures of Japan.** The growth of native civilization in Japan (3 cred.; jr., sr., grad.; no prereq.) VI MWF Spencer
- 129s. **Economic Activities in Primitive Culture.** Varied systems of making a living in pre-literate groups. Economy of hunting and fishing tribes, primitive agriculturists, and simple herders. Relations between habitat, technology, social organization, and goals and attitudes as focused in the area of economic life (3 cred.; jr., sr., grad.; no prereq.) II MWF Kelly
- 131w. **The Islamic Culture Sphere.** Mohammed and the founding of Islam. Islamic culture as an intermediary between (1) classical and the ancient oriental civilizations and (2) medieval Europe. Legal, political, and theological developments in Islam (3 cred.; jr., sr., grad.; no prereq.) III TThS Spencer

- 140.* Field Trip in Archeology.** Excavations of prehistoric mounds and village sites in the state of Minnesota (1 to 12 cred.; jr., sr., grad.; prereq. male students only, permission of instructor required) Ar. Ar. Wilford
- 150-151-152. Selected Readings in Ancient History.** Early cultures of the Mediterranean Basin (9 cred.; sr., grad.; prereq. consent of instructor) (*Not offered in 1951-52*)
- 161s. Primitive Religion.** Beliefs and practices in primitive religion. The role of the sacred and the supernatural. Beliefs in the life after death (3 cred.; jr., sr., grad.; no prereq.) VII MWF Wallis
- 162. Peoples of Negro Africa.** Physical types, social, political, and economic phases of cultures of Negro Africa (3 cred.; jr., sr., grad.; no prereq.) (*Not offered in 1951-52*)
- 165f. Psychological Phases of Culture.** The impact of cultural tradition on human experience. The significance of culture patterns in the structure and functioning of human experience (3 cred.; jr., sr., grad.; no prereq.) IV MWF Spencer
- 166f. History of Anthropological Theory and Method.** A review of the development of anthropology from early times to the present day. Schools of anthropological thought and various approaches to the data of anthropology (3 cred.; jr., sr., grad.; prereq. 1 or 2, or the old Courses 40 or 42) II TThS Wallis
- 169. Peoples of the South Seas.** A survey of the native cultures of the Pacific Islands (3 cred.; jr., sr., grad.; no prereq.) (*Not offered in 1951-52*)
- 170. Primitive Art.** The role of esthetics in primitive life, the spread of art styles, symbolism. Graphic and plastic arts and place of the artist. Music, drama, the dance, in primitive societies (3 cred.; jr., sr., grad.; no prereq.) (*Not offered in 1951-52*)
- 171. Peoples of Northeastern Asia and Northwestern North America.** The ethnology of the simpler cultures of northern Asia, including the so-called paleo-Asiatic peoples of eastern and central Siberia, the Sinicized tribes, and the Turkish-speaking tribes of central Asia. Eskimo and tribes in western North America (3 cred.; jr., sr., grad.; no prereq.) (*Not offered in 1951-52*)
- 172f. Indians of South America.** An ethnographic survey of South American Indians, with account of prehistory in the various areas and of recent acculturation under Spanish or Portuguese influences. Topics include: race, language, utilization of environment, tribal organization, social and religious aspects. Mention of higher civilizations of Mexico, Central America, Peru (3 cred.; jr., sr., grad.; no prereq.) VIII MWF Kelly

For Graduate Students Only

204f-205w-206s. Seminar in Anthropology. (3 cred. per qtr.; grad.) Ar. Wallis, Wilford, Spencer, Kelly

ARCHITECTURE

Institute of Technology

Department chairman—Roy Jones

Major advisers in Architecture in the College of Science, Literature, and the Arts—Assistant Professor Heath; Mr. Koeper.

Major sequence in the College of Science, Literature, and the Arts—Courses AD-I, AD-II, 51-52-53.

(Prerequisites: High school or college equivalent of Math. 1, Higher Algebra, and Solid Geometry; Phys. 1a-2a-3a; Art 23A-24A-25A and approval by the School of Architecture after formal application has been made. Application forms will be furnished by the School of Architecture or the Office of Admissions and Records. They must be submitted not later than July 15 preceding the beginning of the academic year for which admission is sought.)

This sequence is intended for:

1. Students who for cultural or vocational reasons may want a certain degree of specialization in architecture.
2. Students preparing for further training in such special fields as city planning, landscape architecture, and interior or industrial design.

* This course may be taken for credit only once.

30 COURSE OFFERINGS AND MAJOR REQUIREMENTS

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

A special modification of this sequence is available for students taking the six-year combined course in Arts and Architecture leading to both the liberal arts and professional architectural degrees. Such students should include, in addition to the courses listed above, Math. 6-7, 30; Math. and Mech. 91-92-93; either C.E. 38-39-41 or Arch. 57-58-59; Art 60A-61A-62A, and Chem. 1-2 or 6-7 if they have had no chemistry in high school. For further information concerning the six-year combined course, see page 158 of this bulletin.

Note—Consult the *Bulletin of the Institute of Technology* for program of hours, days and instructors, and for additional courses.

Junior College Courses

Arch.1s. Introduction to Architecture. Discussions and problems to inform prospective students regarding the nature of architecture as an art and a profession (1 cred.; open only to students intending to major in architecture; prereq. approval of major adviser)

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

Arch.51f-52w-53s.[†] History of Architecture. Significant architecture of the past, with particular reference to the geographic, social, and technical influences which produced it (12 cred.; jr., sr.; no prereq.)

Arch.101f-102w-103s. Tutorial Work in History of Architecture (6 cred.; jr., sr.; prereq. 53)

Arch.104f. City Planning. General survey of the economic, governmental, social and technical phases of city planning and group housing (3 cred.; sr., grad.; no prereq.)

AD-II,w,s.^{‡\$} Architectural Design, Grade I (18 cred., normally 6 cred. per qtr.; jr., sr.; prereq. permission of School of Architecture)

AD-III,w,s.^{‡\$} Architectural Design, Grade II (18 cred., normally 6 cred. per qtr.; jr., sr.; prereq. AD-I)

ART

Department chairman—H. Harvard Arnason

Major advisers for all courses in Art in the College of Science, Literature, and the Arts—Professors Arnason, Tselos; Associate Professors Morris, Rood; Assistant Professors Arnest, Downs, Eitner, Morton; Mr. Torbert.

The principal objective of the Department of Art is to contribute to the general education of all students at the University of Minnesota. With this end in view all courses in both history and practice will lay particular stress on the problems and needs of the nonprofessional 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 theory or studio, the Department of Art offers graduate courses leading to the degrees of M.A. and Ph.D. in history and criticism, and to the M.F.A. in the practice of art.

Note: All students in art may be required to leave permanently with the department outstanding examples of their work. These examples will be used for exhibition purposes and as a continuing record.

[†] To receive credit for any part of this course a student must complete the parts preceding the dagger.

^{‡\$} Completion of this course is dependent on achievement rather than time. Students will continue their registration until the course is completed and a mark reported. The number of credits earned per quarter may be larger or smaller than the amount indicated as normal.

Major sequences in the College of Science, Literature, and the Arts—In the Department of Art it is possible to major in the history and criticism or the practice of art, or in various combinations of these. The four categories of major concentrations listed below indicate the prerequisites which must be satisfied in all areas, but beyond this are intended to serve merely as a guide to the student, indicating certain possible programs. Many variations are permitted. It is advisable that 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 and Criticism of Art. Prerequisites: Art 1, 2, 3, Introduction to Art; Art 23, Drawing and Design I. Requirements: Art 50, Pictorial Design; 27 credits in history of art courses numbered above 50; reading knowledge of one foreign language. The following areas are recommended as minors for students majoring in history or criticism of art: humanities, literature, philosophy, or languages.

B. Painting and Prints. Prerequisites: Art 1, 2, 3, Introduction to Art; Art 23, 24, 25, Drawing and Design I. Requirements: Art 50, 51, 52, Pictorial Design; 9 additional credits in painting or prints courses numbered above 50; 9 credits in Senior College courses in history of art.

C. Sculpture. Prerequisites: Art 1, 2, 3, Introduction to Art; Art 23, 24, 25, Drawing and Design I; Art 40, 41, 42, Sculpture I. Requirements: Art 53, 54, Design II; 9 credits in Senior College courses in sculpture; 9 credits in Senior College courses in history of art. Arch. AD-I is a recommended minor for sculpture majors.

D. Design. Prerequisites: Art 1, 2, 3, Introduction to Art; Art 23, 24, 25, Drawing and Design I. Requirements: Art 53, 54, 55, Design II; 9 additional credits in Senior College courses in design; 9 credits in Senior College courses in history of art. Arch. AD-I is a recommended minor for design majors.

Note: Art 10, Photography, is strongly recommended for all majors in the department.

Junior College Courses

Art 1f,w,s-2w-3s. Introduction to Art.

Art 1f,w,s. Principles of Art. A lecture and laboratory course introducing the student to basic problems of art. Examples from the painting, sculpture, and architecture of various periods will be used to illustrate general cultural factors that influence the production of art as well as basic problems of design and of technique. The laboratory-discussion sessions will introduce the students to practical problems arising from the nature of the materials of the visual arts (This course, together with Music 10 and Philosophy 4, forms a sequence in the Arts*) (4 cred.; no prereq.) Lect. III MWF Torbert and faculty; Lab. I-II M; III-IV M; I-II T; III-IV T; V-VI T; VII-VIII T; IX-X T; I-II W; III-IV W; I-II Th; III-IV Th; V-VI Th; VII-VIII Th; I-II F; III-IV F

Art 2w. Masters of Art. A selective study of some acknowledged masters and master-pieces of world art. Pheidias and the Parthenon, Duccio and Giotto, Michelangelo, Dürer, Titian, Rembrandt, Rubens, Ingres, Delacroix, Rodin, Cézanne, Van Gogh, Gauguin, Matisse, Picasso, Frank Lloyd Wright, etc. (3 cred.; prereq. 1) III MWF Arnason

Art 3s. Elements of Art Criticism. A course conducted on the discussion principle, intended to develop in the student the faculty of independent analysis and appraisal of works of art. The discussions will be conducted by artists and art historians and will be based on a program of selected reading and visits to local art galleries (3 cred.; prereq. 2) III MWF Eitner

Art 10f,w,s. Photography. Fundamental principles of photography. The use of cameras, developing, printing, and other elementary techniques (the same as Jour. 10) (3 cred.; no prereq.) Lect. V T; lab. II-III WF Downs

* See under General Studies page 72.

- Art 23f,w,s. Drawing and Design I.** Experience in handling the materials and tools of both drawing and design. Experiments and discussions deal with the characteristics and use of line, shape, value, texture and color, and their relationships. Descriptive and imaginative drawing (5 cred.; prereq. 1, but may be taken at the same time as 1) I-III MWF Morris; IV-VI MWF Downs
- Art 24f,w,s. Drawing and Design I.** A development of the experiments in drawing and design emphasizing problems of space, color, and relations of form and content (5 cred.; prereq. 23) VII-IX MWF Collins
- Art 25f,w,s. Drawing and Design I.** Three-dimensional design workshop. The elements of design are studied in relation to fundamental materials such as woods, metal, and plastics. The student is taught the use of basic hand tools and processes of construction (5 cred.; prereq. 1, but may be taken at the same time as 1) I-III MWF Frazier; VI-VIII MWF Tovish
- Art 23Af. Drawing and Painting I.** Sections for architects only (2 cred.; no prereq.) VI-VIII TTh Arnest
- Art 24Aw. Drawing and Painting I.** Sections for architects only (2 cred.; prereq. 23A) VI-VIII TTh Arnest
- Art 25As. Drawing and Painting I.** Sections for architects only (2 cred.; prereq. 24A) VI-VIII TTh Tovish
- Art 30f,w,s. Elements of Drawing.** An elementary course introducing basic problems in drawing. No previous experience required. Work in various drawing media. Subject matter: still life, figure, landscape, and nature study (2 cred.; no prereq.; credited only as elective for art and art education majors) III-IV MW Doseff; VI-VII MW Rollins; VI-VII TTh Quirt
- Art 31f,w,s. Elements of Drawing.** Continuation of Art 30 (2 cred.; prereq. 30) I-II MW Doseff; I-II TTh Quirt
- Art 33f,s. Textile Design: Weaving.** Fundamental weaving with emphasis on color and texture in the development of handwoven fabrics; also, experience in draft writing and threading of simple looms (3 cred.; prereq. 24) VI-VII MWF Berglund
- Art 34f,w. Textile Design: Weaving.** An overview of hand weaving, past and present, and experience in the use of different kinds of looms to gain an understanding of their possibilities and limitations in the development of fabric design (3 cred.; prereq. 33) VIII-IX MWF Berglund
- Art 40f,w,s. Sculpture I.** General anatomy through modeling of head and figure from life, with supplementary discussions and drawing exercises (3 cred.; prereq. 25) I-III TTh Frazier
- Art 41,42f,w,s. Sculpture I.** Sculptural problems in clay with some head and figure modeling. Practice in making armatures and molds. Some attention is given to sculptural design for architecture (3 cred. per qtr.; prereq. 40) III-IV MWF Tovish
- Art 43f. Textile Design.** Development of two-dimensional textile design in which fabrics, yarns, and other pliable materials are the media and needles, hooks, mesh sticks, and shuttles are the tools (3 cred.; prereq. 24) II-III MWF Berglund
- Art 46f. Art in Egypt, Mesopotamia, and Greece.** The architecture, sculpture, and painting of the pre-Hellenic civilizations in Egypt, Mesopotamia, and the Aegean. The development of Greek art from its beginnings to the Periclean age (This course is designed as an introduction to art history for the general student) (3 cred.; no prereq.) II MWF Eitner
- Art 47w. Hellenistic Art to Christian Art.** The art of the Hellenistic kingdoms. Hellenic and Etruscan art in Italy. Art of the Roman Empire. The transformation of classical styles under the influence of oriental traditions and of Christian religion. The development of Christian art. The art of the Byzantine Empire. Survivals of classical forms in early medieval art (This course is designed as an introduction to art history for the general student) (3 cred.; no prereq.) II MWF Eitner
- Art 48s. Romanesque and Gothic Art.** The development of architecture, sculpture, and painting in western Europe and Italy from the tenth until the fifteenth century. The art of the cathedrals. Romanesque and Gothic monumental and manuscript painting. The development of Gothic art as manifestation of currents in medieval culture (This course is designed as an introduction to art history for the general student) (3 cred.; no prereq.) II MWF Eitner

Senior College Courses

HISTORY AND CRITICISM OF ART*

- Art 50f-51w-52s. Pictorial Design—Theory and Practice.** A course combining critical analysis of past and contemporary painting traditions with creative studio problems. Materials and tools of the painter; pictorial design in various media; conceptual problems related to subject, content, and form with particular attention in these studies to contemporary painting. Intended for both art history and studio majors. Sections will meet together for lectures and discussion and separately for laboratory. Grading will be on the basis of understanding of principles rather than on technical proficiency (3 cred. per qtr.; jr., sr.; prereq. 23 or equiv. and consent of instructor. May be taken concurrently with Art 60, 61, 62 or Art 70, 71, 72 or with any Senior College courses in art history) VI-VIII TTh Booth and ar.
- Art 56f. Renaissance and Baroque Art: 1300-1500.** Painting, sculpture, and architecture in Europe from Duccio to Raphael. Giotto and the fourteenth century in Italy. Architecture of the early Renaissance. The Van Eycks, Masaccio, Donatello, and the fifteenth century in Italy and Flanders. Leonardo, Raphael, Dürer, and the High Renaissance (Elective credit only for majors in art history) (3 cred.; jr., sr.; prereq. 1 or consent of instructor) IV MWF Thomas
- Art 57w. Renaissance and Baroque Art: 1500-1650.** Painting, sculpture, and architecture in Europe from Michelangelo to Rubens. Titian, Tintoretto, and the sixteenth century in Venice. Palladio and the academic attitude in architecture. Caravaggio, El Greco, and the early Baroque. The developed Baroque style of Bernini and Velazquez (Elective credit only for majors in art history) (3 cred.; jr., sr.; prereq. 1 or consent of instructor) IV MWF Thomas
- Art 58s. Renaissance and Baroque Art: 1650-1800.** Painting, sculpture, and architecture in Europe from Rembrandt to David. Seventeenth-century art of Holland. Poussin and the classical tradition in France and England. Watteau, Boucher, and eighteenth-century decoration. The English portraitists. The rise of Neoclassicism in Italy and France (Elective credit only for majors in art history) (3 cred.; jr., sr.; prereq. 1 or consent of instructor) IV MWF Thomas
- Art 66f. Modern Art: Classicism and Romanticism.** The development of painting, sculpture, and architecture from the period of the French Revolution to about 1850 in France, Germany, Spain, and England, with an introduction to parallel movements in the United States (3 cred.; jr., sr.; prereq. 1 or consent of instructor) VII MWF Eitner
- Art 67w. Modern Art: Realism and Impressionism.** Painting, sculpture, and architecture during the second half of the nineteenth century with particular emphasis on the schools of Paris, their influence and parallels in England, Germany, and the United States (3 cred.; jr., sr.; prereq. 1 or consent of instructor) VII MWF Eitner
- Art 68s. Modern Art: Contemporary Art in Europe and America.** Development of painting, sculpture, and architecture in Europe and the United States during the twentieth century (3 cred.; jr., sr.; prereq. 1 or consent of instructor) VII MWF Eitner
- Art 76f. Art of Latin America.** A study of painting, sculpture, and architecture in Latin America, treating the pre-Columbian traditions, the development of the various colonial styles and the most significant of the national schools in the periods prior to the twentieth century (3 cred.; jr., sr.; prereq. 1 or consent of instructor. It is recommended that this course be taken in conjunction with Art 57 or Art 126) II TTh and ar. Ar.
- Art 77w. Art of Latin America.** A study of Latin-American arts in the twentieth century with particular emphasis on painting and architecture in Mexico and South America (3 cred.; jr., sr.; prereq. 1 or consent of instructor. It is recommended that this course be taken in conjunction with Art 76 and Art 57 or Art 126) II TTh and ar. Ar.
- Art 78s. Art of China.** Development of painting, sculpture, and minor arts in China from earliest times to the present (3 cred.; jr., sr.; prereq. 1 or 9 credits in history or literature with consent of instructor. May be taken in conjunction with Hist. 62f-63w) IV TTh and ar. Mather
- Art 96f. The History of the Graphic Arts.** The origins of the woodcut and of engraving. Renaissance and Baroque master etchers and engravers. Mantegna, Raimondi, Schongauer, Dürer, Holbein, Lucas Van Leyden, Callot, Rembrandt. The reproductive and portrait engraving of the seventeenth and the eighteenth centuries. Lithog-

* Arch. 51-52-53, History of Architecture, and Arch. 101-102-103, Tutorial Work, may with consent of adviser be taken as part of major sequence in history of art.

34 COURSE OFFERINGS AND MAJOR REQUIREMENTS

raphy. Gericault, Delacroix, Daumier. Twentieth-century printmaking (3 cred.; jr., sr.; prereq.* I MWF Thomas

Art 98s. Master Drawings. Historical survey of great drawings from the Gothic period to the present, covering the work of such artists as Pisanello, Leonardo da Vinci, Dürer, Holbein, Raphael, Rembrandt, Rubens, Watteau, Tiepolo, Goya, Gericault, Daumier, Van Gogh, Matisse, Picasso. Stylistic analysis of various schools, periods, and individuals; qualitative analysis of master drawings and school copies (3 cred.; jr., sr.; grad. students may take this course by registering for Art 198 and completing special assignments; prereq.* I MWF Thomas

Art 116f. The Origins of Renaissance Art in Italy. The development of Italian painting and sculpture from Byzantine and Gothic traditions. The Pisani, Giotto and his followers, Duccio, Simone Martini and the Lorenzetti. The continuation of Gothic traditions. The International Style (3 cred.; jr., sr., grad.; prereq.* VI MWF Thomas

Art 117w. Early Renaissance Art and Architecture in Italy. The monumental realists in Florence; Masaccio, Donatello, Ghiberti. Origins of Renaissance architecture; Brunelleschi, Alberti. The Umbrian painters; Piero della Francesca. The development of North Italian painting; Mantegna, Antonello da Messina, the Bellini. Florentine fifteenth-century sculpture and architecture. Sienese sculpture and painting; Jacopo della Quercia (3 cred.; jr., sr., grad.; prereq.* VI MWF Thomas

Art 118s. High Renaissance Art and Architecture in Italy. The works of Leonardo da Vinci, Raphael, and Michelangelo. The Venetian painters of the High-Renaissance; Titian, Tintoretto, Veronese. The Mannerists. Proto-Baroque currents (3 cred.; jr., sr., grad.; prereq.* VI MWF Thomas

Art 126f. The Baroque Art of Italy and Spain. The Academy and the reform of Manerism. Caravaggio and the early realists. Seventeenth-century painting, architecture, and sculpture in Italy and Spain (3 cred.; jr., sr., grad.; prereq.* III TTh and ar. Ar.

Art 127w. The Baroque Art of Northern Europe. Emphasis on work of Rubens and Rembrandt. Classic tradition of the seventeenth century in painting, architecture, and sculpture of France and England (3 cred.; jr., sr., grad.; prereq.* III TTh and ar. Ar.

Art 128s. The Art of Eighteenth-Century Europe. Late developments of the Baroque and Neoclassicist reaction in the arts of Italy, France, England, and Germany (3 cred.; jr., sr., grad.; prereq.* III TTh and ar. Ar.

Art 136f. Art in the United States. The Origins. Painting, sculpture, and architecture from the beginnings through the Colonial and Revolutionary periods. Relations with England and the European continent. Copley, Stuart, West, and their followers. The influence of Jefferson (3 cred.; jr., sr., grad.; prereq.* VIII MWF Tselos

Art 137w. Art in the United States. The nineteenth century. The rise of a national style in landscape and realistic genre. Homer, Eakins, Ryder, and their influence. Impressionism and relations with Europe after the Civil War. The beginnings of modern architecture (3 cred.; jr., sr., grad.; prereq.* VIII MWF Tselos

Art 138s. Art in the United States. The Contemporary Movements. The Armory Show and development of modern realism, expressionism, and abstraction. Frank Lloyd Wright and modern American architecture (3 cred.; jr., sr., grad.; prereq.* VIII MWF Tselos

Art 146f. European and American Architecture: 1775-1850. Revivalist and progressive movements; Neoclassic and Neogothic styles; genesis of modern style under rationalism and industrial revolution. Special emphasis on contributions of most important architects of France, England, and United States (3 cred.; jr., sr., grad.; prereq. § V MWF Tselos

Art 147w. European and American Architecture: 1850-1900. Victorian Gothic eclecticism, and the rise of modern pragmatism in architecture within historical and anti-historical currents; the influence of Victorian Gothic and French academism on American architecture and the divergent reactions (3 cred.; jr., sr., grad.; prereq. § and 146) V MWF Tselos

Art 148s. Modern Architecture: 1900-1950. The rise of proto-modern architecture in European and American centers; the development of the new international style in its various phases; its relation to modern sculpture and painting and its meaning in the new esthetic directions (3 cred.; jr., sr., grad.; prereq. § and 147) V MWF Tselos

* Prerequisite is 9 credits in history of art, or 9 credits in literature or history with consent of instructor.

§ Prerequisite is Art 1 and 9 credits in history of art, or 9 credits in history or literature with consent of instructor.

Art 156Af-157Aw-158As.† **Twentieth-Century European and American Painting.** The growth of modern painting and of the post-impressionist inheritance; French Fauves and German expressionists; the impact of primitive art and its assimilation in cubism; the puristic defections and rise of Dada and surrealism; the new objectivity, the new romanticism and the new eclecticism; special attention will be given to peculiarly American assimilation of the European phases of painting (9 cred.; sr., grad.; prereq.§) VII MWF Arnason

Art 166. *European and American Sculpture from Houdon to Rodin: 1750-1900.* The transition from the rococo to Neoclassicism; the academic romantic and realistic currents culminating in impressionistic realism in Rodin. The parallel developments in Germany, England, and the United States are considered in terms of their outstanding representative sculptors (3 cred.; sr., grad.; prereq.§) (Not offered in 1951-52)

Art 167. *Modern Sculpture in Europe and the United States since 1900.* The influence of Rodin and the reactions against his impressionistic romanticism; the direction toward the archaic, medieval and primitive sculpture; the impact of abstract painting and the expansion of the limits of sculpture into symbolic primitivism, constructivism and kinetic sculpture (3 cred.; sr., grad.; prereq.§) (Not offered in 1951-52)

Art 176f,177w,178s. **Scandinavian Art.** Painting, sculpture, architecture in Denmark, Norway, Sweden, Finland, and Iceland from the beginnings to the present day. After a general survey in the fall quarter, the winter and spring quarters will be devoted largely to modern Scandinavian art with considerable emphasis on recent developments in industrial and applied arts (3 cred. per qtr.; jr., sr., grad.; prereq. 9 cred. in history of art or 9 cred. in history or literature with consent of instructor) VI TTh and ar. Visiting professor

Art 196f-197w-198s.† **Readings in Art History and Criticism** (9 cred.; sr., grad.; prereq. permission of instructor) Ar. Ar. Arnason, Tselos, and faculty

For Graduate Students Only

Art 206f-207w-208s.† **Seminar: European and American Architecture** (9 cred.; prereq. permission of instructor) Ar. Ar. Tselos

Art 216f-217w-218s.† **Seminar: European and American Painting** (9 cred.; prereq. 27 cred. in Senior College courses in art history and permission of instructor.) Ar. Ar. Arnason, Tselos

Art 236f-237w-238s.† **Seminar: Problems in Art History and Criticism** (Cred. ar.; prereq. consent of instructor) Ar. Ar. Arnason, Tselos

Art 250f-251w-252s.† **Thesis Seminar.** Independent creative and critical research. Required of M.F.A. students. Also open to second year M.A. and Ph.D. students (Cred. ar.; prereq. permission of graduate adviser) Ar. Ar. Morris, Arnest, and faculty

PAINTING, SCULPTURE, AND PRINTS

Art 50f-51w-52s. Pictorial Design—Theory and Practice. A course in practical criticism combining critical analysis of past and contemporary painting traditions with creative studio problems. Materials and tools of the painter; pictorial design in various media; conceptual problems related to subject, content, and form with particular attention in these studies to contemporary painting. Intended for both art history and studio majors. Section will meet together for lectures and discussion and separately for laboratory. Grading will be on the basis of understanding of principles rather than on technical proficiency. May be taken concurrently with Art 60, 61, 62 or Art 70, 71, 72 or with any Senior College courses in art history (3 cred. per qtr.; jr., sr.; prereq. 23 or equiv. and consent of instructor) VI-VIII TTh Booth and ar.

Art 60-61-62f,w,s. Drawing and Painting II. A continuation of Art 23, 24, placing particular emphasis upon life drawing and the use of the human figure in pictorial design. Drawings from the model and from memory. Introduction to painting media. Related studies of past and contemporary drawing and painting employing the human figure (3 cred. per qtr.; jr., sr.; prereq. 24 or 31 or equiv. or consent of instructor. Art 60, 61, 62 may be taken at the same time as Art 50, 51, 52, and/or Art 70, 71, 72) III-V TTh Arnest; II-III MWF Rollins; IV-V MWF Young; VI-VII MWF Doseff

Art 60A-61A-62Af,w,s. Drawing and Painting II. Sections for architects (2 cred. per qtr.; prereq. Art 25A) II-IV ThS Young and ar.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Prerequisite is Art 1 and 9 credits in history of art, or 9 credits in history or literature with consent of instructor.

- Art 70-71-72f,w,s. Drawing and Painting III.** A course of advanced level offering the student opportunity to work upon individual painting projects. Subject matter and media unrestricted. Individual instruction (3 cred. per qtr.; jr., sr.; prereq. 24) I-IV S and ar. Quirt; III-IV MWF Parker; I-II TThS Arnest
- Art 80-81-82f,w,s. Sculpture II.** Direct carving in stone and wood with attention given to possibilities of materials and sculptural design. Experimental work in metal, plastics, and combinations of sculptural materials. Some direct modeling in plaster (3 cred. per qtr.; jr., sr.; prereq. 42 or equiv.) III-IV MWF Rood; VI-VII MWF Rood
- Art 90-91-92f,w,s. Printmaking.** Problems in engraving, etching and the various techniques employed in working on metal plate, as well as lithography, wood cuts, and combined processes (3 cred. per qtr.; jr., sr.; prereq. 62 or consent of instructor) II-IV MW Myers; VI-VIII MW Myers; VI-VIII TTh Myers
- Art 101-102f,w,s. Ceramic Sculpture.** A course designed to provide a disciplined and permanent medium for advanced sculpture integrated with the courses offered in wood, stone, and metal; to increase the tactile experience of the student through study of a variety of ceramic materials; to study relationships of abstract form compatible with the requirements of the ceramic medium (3 cred. per qtr.; jr., sr., grad.; prereq. 25, 42, and 93) I-II TThS Tovish
- Art 110-111-112f,w,s. Advanced Drawing.** Primarily for painting majors. Drawing in all media from life and from imagination. Studies of the history of drawing (3 cred. per qtr.; jr., sr., grad.; prereq. 62. May be taken at the same time as Art 70-71-72) III-V TTh Arnest
- Art 140f,w,s. Metal Sculpture and Jewelry: Introduction to Metal Design in Jewelry.** In the development of contemporary jewelry, the student learns the basic processes of soldering, forming, forging, engraving, chasing, and repoussé (3 cred.; jr., sr., grad.; prereq. 55 or consent of instructor) III-IV MWF Morton
- Art 141f,w,s. Metal Sculpture and Jewelry.** Special instruction in the areas of metal sculpture, relief sculpture in repoussé, jewelry, and enameling (3 cred.; jr., sr., grad.; prereq. 140 or consent of instructor) VI-VII MWF Morton
- Art 142f,w,s. Metal Sculpture and Jewelry.** Advanced problems in metal sculpture, relief sculpture, jewelry, or enameling (3 cred.; jr., sr., grad.; prereq. 141) VI-VII MWF Morton
- Art 150-151-152f,w,s. Problems in Painting** (Cred. ar.; jr., sr., grad.; prereq. 72 and consent of instructor) I-IV S and ar. Quirt; I-II TThS Arnest; III-IV MWF Parker
- Art 180-181-182f,w,s. Problems in Sculpture.** Advanced work in wood, stone, plaster, metal, and other materials of sculpture. Students work individually on projects (Cred. ar.; jr., sr., grad.; prereq. 82, 102, or 142 or consent of instructor) Ar. Faculty
- Art 190-191-192f,w,s. Problems in Printmaking.** For advanced students interested in the development of contemporary techniques and the study of esthetic directions in printmaking. Will include work in black and white and color in metal, lithographs, and wood blocks (Cred. ar.; jr., sr., grad.; prereq. 92 or consent of instructor) II-IV MW Myers; VI-VIII MW Myers; VI-VIII TTh Myers

For Graduate Students Only

- Art 200-201-202f,w,s. Advanced Problems in Studio Work** (Cred. ar.; prereq. consent of instructor) Ar. Ar. Faculty
- Art 250f-251w-252s.[†] Thesis Seminar.** Independent creative and critical research. Required of M.F.A. students. Also open to second year M.A. and Ph.D. students (Cred. ar.; prereq. permission of graduate adviser) Ar. Ar. Morris, Arnest, and faculty

DESIGN

- Art 53f-54w-55s. Design II.** A continuation of Art 25. Sculptural relationships such as mass, space, line, texture are taught through analysis of materials and through individual experiments. The student is taught the use of basic power equipment.
- Art 53f.** An investigation of tools, materials, their uses and limitations. Discussion and workshop problems in three-dimensional construction, using metal, plaster, and wood (3 cred.; jr., sr.; prereq. 25) I-II MWF Morton
- Art 54w.** The design experience of the student is applied to the solution of advanced problems of three-dimensional construction. The design contents of motion and structural form are introduced. The student is taught to use power machinery (3 cred.; jr., sr.; prereq. 53) I-II MWF Morton

[†] To receive credit for any part of this course a student must complete the parts preceding the dagger.

Art 55s. The study of color as it relates to perception and organization in two- and three-dimensional design. Problems will integrate the use of color, space, and the previously considered elements of design (3 cred.; jr., sr.; prereq. 23, 24, 25) I-II TThS Collins

Art 63f-64w-65s. Introduction to Drawing and Design. A Senior College sequence affording a minor in art. Theory and practice of drawing, painting, and design (Art 65 is concerned with specific application of design principles in commerce and industry. With consent of instructor it may be taken as an independent course without prerequisites)

Art 63f. Problems in Basic Design and Drawing. An introduction to various materials and techniques (5 cred.; jr., sr.; no prereq.) VII-IX MWF Torbert

Art 64w. Problems in Design. Practice in layout techniques (5 cred.; jr., sr.; prereq. 63) VII-IX MWF Torbert

Art 65s. Coordinated Use of Drawing, Painting, and Design for Purpose of Presentation in Commerce and Industry (5 cred.; jr., sr.; prereq. consent of instructor) VII-IX MWF Torbert

Art 73f-74w-75s. Presentation Techniques. A study of the communication of visual ideas in the fields of exhibition techniques, illustration, and advertising. Source materials available in nature and tradition and creative use of media are explored as a part of the problem of organization.

Art 73f. Experiments in the Use of Wash Techniques, Ink, Gouache, Watercolor, and Other Media. Elementary problems in presentation using the limitations of the media as a starting point (3 cred.; jr., sr.; prereq. 24. For architects there is no prerequisite) I-III TTh Collins

Art 74w. Discussions and Readings in Area of Visual Communication. Workshop problems in photomechanical and related print processes, air brush, and mixed graphic techniques (3 cred.; jr., sr.; prereq. 73) I-III TTh Collins

Art 75s. Practice in the Use of Symbols in Specific Presentation Problems and a Reconsideration of General Design Principles (3 cred.; jr., sr.; prereq. 74) I-III TTh Collins

Art 83f-84w-85s. Design and Photography. For students desiring a more intensive study of photography than is offered in Art 10. Basic techniques and use of photography as a creative medium, through progressive laboratory problems.

Art 83f. Preliminary Survey of Photographic Equipment and Materials, Camera Procedure, Film Processing, and Printing. Field and studio problems in the use of elements of design (3 cred.; jr., sr.; prereq. 1 and 10) VI-VIII WF Liebling

Art 84w. Experiments in Photographic Controls for Purposes of Understanding the Limitations and Capacities of Photography, and Continued Design Problems (3 cred.; jr., sr.; prereq. 83) VI-VIII WF Liebling

Art 85s. Series of Problems in Application of Design Relationships in Photography with Emphasis on an Awareness of the Visual Environment. Primarily outdoor photography (3 cred.; jr., sr.; prereq. 84) VI-VIII WF Liebling

Art 89w,s. Textile Design: Weaving. Advanced weaving: development of further skill in weaving and exploration of its use in the home, for commercial purposes, etc. (3 cred.; jr., sr.; prereq. 34) VIII-IX MWF Berglund

Art 93f,w,s. Ceramic Processes. Aim: to provide a foundation for work in either ceramic design or ceramic sculpture through an introduction to materials, forming methods, and production processes; to provide basic experience in three-dimensional form through making models by both hand and machine methods; to provide a criterion for judging good design in ceramic products, either hand or machine made (3 cred.; jr., sr.; prereq. 25 or equiv.) III-IV TThS Ar.; VI-VIII TTh Ar.

Art 94f,w,s-95f,w,s. Ceramic Design. Aim: to solve problems of product design, such as dinnerware, suited to the ceramic medium; to gain experience in methods of forming processes employed industrially, such as slip casting, jiggering, and pressing; to develop a sensitivity to the relationship between three-dimensional form and function of the object (3 cred. per qtr.; jr., sr.; prereq. 93) I-II TThS Tovish

Art 97w. Textile Design: Printing Processes. Tie-dye, stenciling, block printing, silk screen printing, batik, etc., on fabrics (3 cred.; jr., sr.; prereq. 24 or equiv.) II-III MWF Berglund

Art 103f-104w-105s. Design in Industry. The course is concerned with the analysis of products designed for industrial production, and a historical survey of design in industry, combined with practical workshop problems. The aim is to acquaint the

student with the ways in which industrial processes and production techniques affect concepts of design in contemporary society.

Art 103f. The Historical Development of Industrial Design. An evaluation, by means of research problems, of the relationship between design, function, and manufacturing processes (3 cred.; jr., sr., grad.; prereq. 53, 54, 55) Ar. Ar. Faculty

Art 104w. Continued Research and Field Trips Investigating Design in Industry and the Effects of Mass Production on the Product. Practical laboratory problems in design for industry (3 cred.; jr., sr., grad.; prereq. 103) Ar. Ar. Faculty

Art 105s. Continuation of Art 104. Leading to a final experimental problem (3 cred.; jr., sr., grad.; prereq. 104) Ar. Ar. Faculty

Art 123f-124w-125s. Advanced Photography. An intensive course in photographic technique and use of photography as an art medium.

Art 123f. Practice in Use of Various Photographic Equipment and Materials, Technical Problems in Exposure and Printing Balance, Lighting, and Limited Work in Color (3 cred.; jr., sr., grad.; prereq. 85) VII-IX MW Downs

Art 124w. Studio Problems in Experimental Photography and General Discussions in the Field of Contemporary Movements in Photography (3 cred.; jr., sr., grad.; prereq. 123) VII-IX MW Downs

Art 125s. Assigned Field Problems in Documentary Photography Treated from the Standpoint of Quality of Design, and One Major Project (3 cred.; jr., sr., grad.; prereq. 124) VII-IX MW Downs

Art 193f-194w-195s. Advanced Problems in Design. A course offering the advanced student an opportunity to carry out a creative problem in design with guidance in practice and research methods. Discussions concerned with common denominators of art as they occur in commercial art, illustration, display, and museum techniques, industrial design, and also esthetic, economic, and social implications of design (3 cred. per qtr.; jr., sr., grad.; prereq. one design course beyond 53, 54, 55) Ar. Ar. Faculty

ASTRONOMY

Department chairman—Willem J. Luyten

Major adviser in the College of Science, Literature, and the Arts—Professor Luyten.

Major sequence in the College of Science, Literature, and the Arts—Courses 51-52-53, 101, and Math. 50, 51, 105.

(Prerequisites: Math. 6-7, or Math. 6 and at least five credits in chemistry, geology, or physics.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Junior College Courses

11f,s.*|| Descriptive Astronomy. A brief survey of what is known about the sun, the moon, the planets and their motions, followed by a description of the constellations and a summary of our knowledge of the stellar universe to which the sun belongs. This course is completely nonmathematical (5 cred.; no prereq.) IV MTWF and one evening a week with the telescope, weather permitting. Luyten

20w. Astronomy for Celestial Navigation. Deals with the principles and the practice of navigation of planes and ships by using the stars in the sky. Some dead-reckoning navigation is included (5 cred.; no prereq.) III MTWF and one 3-hour lab. ar. Luyten

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

51w.* General Astronomy. An outline of our knowledge of the planetary system and its motions, including those of the earth and the moon (3 cred.; jr., sr.; prereq. Math. 6) IV MWF Luyten

* No student may receive credit for both Course 11 and Course 51.

† No student may receive credit for this course if he has completed Nat.Sci. 1 or 4.

- 52w.8 Astrophysics** (4 cred.; prereq. 51 or 11 and Math. 6) II MTWF Luyten
53s.8 Stellar Astronomy (3 cred.; prereq. 51 or 11 and Math. 6) II MWF Luyten
101f.8 Celestial Mechanics (3 cred.; jr., sr., grad.; prereq. Math. 51) II MWF Luyten
140f.8 Least Squares (3 cred.; prereq. 51 or 11 and at least Math. 51) II MWF Luyten

NOTE—Courses 101 and 140 are usually offered in alternate years, and only one will be given in each year, depending largely on the demand.

BACTERIOLOGY

College of Medical Sciences

Department chairman—Jerome T. Syverton

Major advisers in the College of Science, Literature, and the Arts—Drs. Syverton, Watson, Johansson, Schmidt, and Werder.

Major sequence in the College of Science, Literature, and the Arts—Eight Senior College credits in org. chem., Bact. 53, 102, and 12 further Senior College credits in bact. Zool. 51 may count as bacteriology, but not as organic chemistry.

(Prerequisites: 10 credits in botany or zoology or plant pathology, and 15 credits in inorganic and analytical chemistry. Plan I with a foreign language is strongly recommended.)

Modification of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Senior College Courses

Course 53 is open to Junior College students who have a grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

D.H.50w. Dairy Bacteriology (3 or 5 cred.; 3 cred. for lect., 2 cred. for lab.; soph., jr., sr.; prereq. Bact. 53) (Lecture may be taken separately only by permission of instructor)
 Lect. VI MWF; lab. VII-VIII MWF Olson

53f,w,s,*‡ General Bacteriology. Lectures, demonstrations, and laboratory exercises are employed for instruction in the morphology, physiology, taxonomy, and ecology of bacteria. The practical applications of these fundamental principles in other phases of science and industry are emphasized (5 cred.; soph. with a C average in the prerequisite courses, jr., sr.; prereq. 10 cred. in chem. and 4 cred. in biological sciences or permission of instructor) VI-IX MWF Staff

102w.‡ Medical Bacteriology. The pathogenic bacteria, especially in their relationship to disease; principles of infection and immunity. For students other than medical students (5 cred.; prereq. 53) III-V MWF Staff

103s.8 Soil Microbiology. Studies of the bacteria, fungi, and actinomycetes of the soil, with emphasis on the biochemical activities of the soil microflora (4 cred.; jr., sr., grad.; prereq. 53 and 8 cred. in org. chem.) I-III MF, I W Schmidt

104f.8 Sanitary Bacteriology. Microbiology of sewage, water, dairy and certain other food products; analytical studies and evaluation of results. Primarily for majors and minors in bacteriology (4 cred.; jr., sr., grad.; prereq. 53 and 15 cred. in chem.) I-III MWF Johansson

112f. General Mycology. A survey of the perfect fungi with emphasis on life cycles, morphology, ecology, and economic significance (Formerly Bact. 113) (3 cred.; jr., sr., grad.; prereq. 53 and 15 cred. in bact. or 3 cred. in pl. path.) III-V MW Christensen

* A course in Bacteriology 1, Elementary Bacteriology, is available in the Extension Division (winter quarter) for Occupational Therapy and Dental Hygiene students receiving special permission from the Department of Bacteriology.

† Microscope required. Students may obtain use of microscope by purchasing \$3 microscope cards from the bursar.

‡ No student should register for this course without first consulting the instructor.

40 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 113w. **Actinomycetes and Yeasts.** A study of the taxonomy, morphology, genetics, and ecology of the actinomycetes and yeasts; detailed consideration is given to the physiology and economic importance of these microorganisms (Formerly Bact. 114) (3 cred.; jr., sr., grad.; prereq. 112) VII-IX TTh Roth
- 114s.¶ **Medical Mycology.** A study of the pathogenic fungi and of the mycotic infections in man and animals; special emphasis is placed on diagnostic procedures (3 cred.; jr., sr., grad.; prereq. 102) (Not offered in 1951-52)
- 115s. **The Fungi Imperfecti.** A study of the ecology, biochemistry, nutrition, metabolism, genetics and economic role of the more important genera of the asexual fungi (3 cred.; jr., sr., grad.; prereq. 112) I-III WF Roth
- D.H.115s. Advanced Dairy Bacteriology** (3 cred.; sr., grad.; prereq. Dairy Husb. 2, 111, or 112) Ar. Ar. Jezeski
- 116s. **Immunology.** A study of the mechanisms of the interactions between the host and the parasite. The technics and theories of serologic procedures; laws of hemolysis, quantitative relationship between antigen and antibody; opsonins, serums, vaccines, toxin, antitoxin, complement fixation, neutralization, precipitative and agglutinative reactions, blood grouping, atopy, anaphylaxis (3 cred.; jr., sr., grad.; prereq. 102 or 105) VII-IX TTh Watson
- Pl.Path.117s. Virus Diseases of Plants.** The nature of plant viruses and types of diseases they cause; particular emphasis on methods for studying virus diseases (3 cred.; jr., sr., grad.; prereq. Pl.Path. 1 or 10) III-IV MWF Eide
- 121s. **Physiology of Bacteria.** A detailed study covering the following topics: chemical and physical structure; staining; growth; influence of environment on growth; nutrition; enzymes; metabolism. Required of all graduate students in bacteriology and open to others by permission of instructor (3 cred.; jr., sr., grad.; prereq. 53 and 8 cred. in org. chem. or biochem.) III TThS Lichstein
- 122w. **Physiology of Bacteria Laboratory.** Special techniques employed in the study of bacterial physiology and metabolism. Required of all graduate students in bacteriology and open to others by permission of the instructor (3 cred.; prereq. 121) VI-VIII M and VI-VII WF Lichstein
- 123s.¶ **Bacterial Metabolism.** An advanced treatment of several broad aspects of metabolism including: enzymes; biological energy; fermentation; respiration; nitrogen metabolism; photosynthesis. Required of all graduate students in bacteriology and open to others by permission of instructor (3 cred.; prereq. 121, 122 or equiv. and introductory biochem.) III TThS Lichstein
- 124f. **Viruses and Rickettsia.** Character, nature, and transmission of viruses and rickettsia; important virus and rickettsial diseases; methods for identification and laboratory diagnosis (4 cred.; jr., sr., grad.; prereq. 102 or 105, 116) VI-IX TTh Syverton

BIOLOGY

See Natural Science, page 72.

BIOSTATISTICS

See Public Health, page 135.

BOTANY

Department chairman—A. Orville Dahl

Major adviser in the College of Science, Literature, and the Arts—Professor Dahl.

Major sequence in the College of Science, Literature, and the Arts—

1. The following courses in Senior College botany: 50, 51, 52, 53, 54, Pl.Path. 56, and a course in a biological science at the Biological Station at Itasca Park.
2. Two quarters of organic chemistry (e.g. Agr.Biochem. 1, 3 or, preferably, 61, 62).
3. Principles of genetics (Agron. and Pl.Gen. 31 or Zool. 83).

¶ This course is offered in alternate years.

(Prerequisites: Bot. 1, 2, 3 (or 4, 5) and Zool. 1, 2, 3 (or 14-15) or Nat. Sci. 7, 8, 9; two quarters of inorganic chemistry (e.g., Chem. 1, 2); Math. 15, 16 (or preferably 50); German through German 3.)

Recommended electives for botany majors: Phys. 1a, 2a, 3a or 4, 5, 6 or 7, 8, 9; French through French 3; Public Health 110, 111; Zool. 82; Bact. 53; Geol. 1, 2, and A, B; courses in Social Science or Humanities.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Minor sequence in the College of Science, Literature, and the Arts—Bot. 1, 2, 3, or 4, 5 or Nat. Sci. 7, 8, 9 plus 15 credits in Senior College botany courses.

Major adviser in the College of Education—Professor Frenkel

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

For a course in General Biology, Nat. Sci. 7-8-9, see Department of General Studies, page 73.

Junior College Courses

General Botany 1-2-3, and 4-5, are not open to students who have taken General Biology (Nat.Sci. 7-8-9).

1f-2w-3s.* General Botany. A survey lecture and laboratory course on plants and their human interest; characteristics of living matter; fundamental facts of growth, structure, and reproduction of plants; principles underlying inheritance, variation, organic evolution, and relations to environment (10 cred.; no prereq.) Lect. III TTh; VI TTh Hall; lab. III-IV TTh (intended primarily for students in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine); V-VI TTh (intended primarily for students in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine); VII-VIII TTh (intended primarily for students in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine); IX-X TTh (intended primarily for students in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine); III-IV WF; V-VI WF; VII-VIII WF

10s.8 Minnesota Plant Life. A nontechnical survey of all the groups of plants native to Minnesota with special reference to identification and distribution. A course suitable for nonmajors (3 cred.; no prereq.) Lect. VII WF, lab. VII-VIII M Staff

12w.8 Plants Useful to Man. Survey of the world's useful plants and plant products, their sources, characteristics and uses. Demonstration of material. Plants and man: the origin and history of cultivated plants. A course suitable for nonmajors (3 cred.; no prereq.) IV TThs Staff

Senior College Courses

Courses 50, 51, 52, 53, 54 are open to sophomores who have an average grade of at least C in Bot. 1-2-3 or 4-5 or in Nat.Sci. 7-8-9. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

50f. General Plant Ecology. An introduction to the science of plant ecology, with emphasis upon the adjustment of the individual plant to its environment (3 cred.; jr., sr.; prereq. 1-2-3 or 4-5 or Nat.Sci. 7-8-9) Lect. III MW Ar.; lab. I-II MW; IV-V MW

51s. General Plant Physiology. Introductory study of plant physiology. Emphasis on fundamental principles requisite to understanding physiological phenomena encountered in higher land plants. Cellular physiology, enzymes, respiration, fermentation, photosynthesis, mineral nutrition, water and solute metabolism, hormones, tropisms (4 cred.; jr., sr.; prereq. 1-2-3 or 4-5 or Nat.Sci. 7-8-9 and two quarters of inorganic chemistry) Lect. VI MW Frenkel; lab. III-IV MW; VII-VIII MW; conf. VI F; Ar.

* Any student who has had Course 1 given in 1942-43 and earlier years should register for 2-3. If he has had additional courses he should consult the Department of Botany before registering for any other course. He may be permitted to take any one of Courses 50, 51, 52, 53, 54.

§ This course does not satisfy any part of the laboratory science requirement of the College of Science, Literature, and the Arts.

42 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 52f.s. **Elementary Taxonomy.** Introduction to ferns and flowering plants of Minnesota with reference to the spring flora. The families of plants and their relationships; floral structure; taxonomic terms; methods of collection and identification; three or four field trips (3 cred.; jr., sr.; prereq. 1-2-3 or 4-5 or Nat.Sci. 7-8-9) VI-VIII MW Morley
- 53w. **Introductory Plant Anatomy.** The structure and development of plants with especial reference to the vascular plants (3 cred.; jr., sr.; prereq. 1-2-3 or 4-5 or Nat. Sci. 7-8-9) II-IV TTh Abbe
- 54s. **Survey of the Plant Kingdom.** A brief consideration of evolutionary relationships throughout the plant kingdom, especially as illustrated by life histories (5 cred.; jr., sr.; prereq. 1-2-3 or 4-5 or Nat.Sci. 7-8-9) II-IV MWF Abbe
- 106w. **A Survey of Angiosperm Families I—Lower Angiosperms.** A detailed study of the characteristics of the orders and families of flowering plants on a world-wide basis (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor. It is strongly recommended that students electing this course also elect 107s) II-IV TTh Morley
- 107s. **A Survey of Angiosperm Families II—Higher Angiosperms.** (See 106w) (3 cred.; jr., sr., grad.; prereq. 106) II-IV TTh Morley
- 108f. **Pteridophytes.** The classification of living ferns and fern allies with special attention to temperate North America; terminology; keys; geographic distribution; distinguishing characters of families, genera, and species (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) II-IV TTh Ownbey
110. **Gymnosperms.** A survey of the taxonomy and phylogeny of the gymnosperms with special emphasis on living representatives (3 cred.; jr., sr., grad.; prereq. 52 or 54 or consent of instructor) (*Not offered. Offered in 1952-53*)
- Bact.112f. **General Mycology** (Formerly Bact. 113) (3 cred.; jr., sr., grad.; prereq. Bact. 53 and 15 cred. in bact. or 3 cred. in pl. path.) III-V MW Christensen
- 112w. **Aquatic Flowering Plants.** A study of the higher plants of aquatic and marsh habitats. Identification; adaptive morphology and food value to wildlife (3 cred.; jr., sr., grad.; prereq. bot., zool. or biol. 10 cred., or consent of instructor) Lect. IV MW; lab. VI-VII MW Ownbey
- 113f. **Fall Flora of Minnesota.** A survey of the flowering plants of the state with particular reference to the fall flora of the local area. Collection and identification of species and their distribution in Minnesota; three field trips (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) VI-VIII TTh Morley
114. **Principles of Angiosperm Phylogeny.** A study of evolutionary relationships and the various means of judging them within the Angiosperms. Laboratory investigation of representative and critical groups (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) (*Not offered. Offered in 1952-53*)
- 115s. **Spring Flora of Minnesota.** A survey of the flowering plants of Minnesota. The use of keys and taxonomic descriptions; collection, preparation, and identification of the spring flora of the local area. Three field trips (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) VI-VIII TTh Ownbey
117. **Floristic Plant Geography** (5 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) (*Not offered in 1951-52*)
- 118w. **Extranuclear Cytology.** A detailed study of the structure of protoplasm, cytoplasmic constituents, and the cell wall in the light of their chemical and physical properties (3 cred.; jr., sr., grad.; prereq. 10 cred. in bot., zool. or biol. or consent of instructor) VI-VII MWF Dahl
- 119f. **Nuclear Cytology.** The nonmitotic nucleus, mitosis, meiosis, and the bearing of chromosome behavior on genetics, taxonomy, sex, and the life cycles of plants (3 cred.; jr., sr., grad.; prereq. 10 cred. in bot., zool. or biol. and an elementary course in genetics or consent of instructor) Lect. IV MW Dahl; lab. II-III MW; VI-VII MW
120. **Research Methods in Cytology.** Principles and practice of preparing materials for cytological investigation; methods of investigating such preparations and presenting the results (3 to 5 cred.; jr., sr., grad.; prereq. 1-2-3 or 4-5 or Nat.Sci. 7-8-9, 118 or 119, and consent of instructor) (*Not offered. Offered in 1952-53*)
- 121f. **Developmental Anatomy.** The microscopic structure of vascular plants with particular attention to development in the root, stem, and leaf (5 cred.; jr., sr., grad.; prereq. 10 cred. in bot. or biol.) II-IV MWF Abbe
- 123s. **Research Methods in Histology.** Principles and practice of preparing materials for histological investigation; methods of investigating such preparations and presenting the results (3 to 5 cred.; jr., sr., grad.; prereq. 1-2-3 or 4-5 or Nat.Sci. 7-8-9, 121 or 125 and consent of instructor) Lect. III MWF; lab. ar. Abbe, Hansen

125. **Morphogenesis.** A consideration of the development of form and structure in ontogeny and phylogeny, with especial attention to the phenomena and genetical factors involved (5 cred.; jr., sr., grad.; prereq. 10 cred. in bot. or biol.) (Not offered. Offered in 1952-53)
- 127w. **Morphology of Vascular Plants.** A detailed consideration of the evolutionary interrelationships of the vascular plants (5 cred.; jr., sr., grad.; prereq. 10 cred. in bot. or biol.) II-IV MWF Abbe
- 128s. **Introduction to Paleobotany.** The identification and structure of fossil plants. Emphasis on stratigraphic correlation of plant remains and on the relationship of fossil plants to modern groups (3 cred.; jr., sr., grad.; prereq. 54 or consent of instructor) VI-VII MWF Hall
- 130f. **General Plant Ecology.** Introduction to science of plant ecology, with emphasis upon adjustment of the individual plant to its environment (In order to receive graduate credit for this course an acceptable term paper must be completed) (3 cred.; sr., grad.; prereq. 10 cred. in bot. or biol.) Lect. III MW Ar.; lab. I-II MW; IV-V MW
- 131f. **Field Ecology.** A survey of the local plant communities and their development, and a study of the general principles of plant association and succession; 12 field trips (5 cred.; jr., sr., grad.; prereq. 50 or 130 or For. 3, 4) VI-VIII MWF Lawrence
132. **Morphological Ecology.** The vegetative body of the plant in relation to environment. A survey of evolutional adaptation in the plant kingdom (5 cred.; jr., sr., grad.; prereq. 50 or 130 or For. 3, 4) (Not offered in 1951-52)
- 133s. **Ecological Plant Geography.** Preliminary discussion of ecological principles in plant distribution followed by a detailed study of the vegetation regions of North America (5 cred.; jr., sr., grad.; prereq. 50 or 130 or For. 3, 4) VI-VIII MWF Ar.
- 134f. **Research Methods in Ecology.** Theory and practice of instrumental study of the habitat and of precise investigation of community and succession; 8 field trips (5 cred.; jr., sr., grad.; prereq. 18 cred. in pl. sci. incl. 50 or 130 and consent of instructor) I-III TThS and IV S Lawrence
- 137s. **Experimental Ecology.** The ecological life history of a single native species is worked out in detail, and the principles involved are applied to the study of plant distribution; 8 field trips (5 cred.; jr., sr., grad.; prereq. 18 cred. in pl. sci. incl. 50 or 130, 51 and consent of instructor) I-III TThS and IV S Lawrence
- 140f. **Advanced Survey of Plant Physiology.** Advanced study of major topics in plant physiology. Cell physiology including: membrane phenomena, enzyme catalysis, respiration, fermentation, and photosynthesis; mineral nutrition; water metabolism; translocation of solutes; growth; hormones; tropisms. Students who have had Bot. 51 should not enroll in 140 (3 cred.; jr., sr., grad.; prereq. an elementary course in botany, zoology, or biology or consent of instructor; a course in organic chemistry or biochemistry) 1:00-2:15 p.m. TTh Frenkel
154. **Spectroscopy and Photochemistry Applied to Biology** (3 to 5 cred.; jr., sr., grad.) (Not offered in 1951-52)
- 165s. **Introduction to Pollen Analysis.** The ontogeny, comparative morphology, and identification of pollen grains; preparation of reference collections, applications of pollen analysis to allergy, ecology, and phylogeny; practice in atmospheric analysis (3 cred.; jr., sr., grad.; prereq. consent of instructor) VI-VII MWF Dahl
170. **Water Relations of Plants.** Study of colloidal phenomena, diffusion, osmosis, and characteristics of living membranes. Cell water relations. Phenomena of absorption, transport, and transpiration of water and translocation of solutes in higher plants (3 cred.; sr., grad.; prereq. Bot. 51 or 140, 20 cred. in chem. or agr. biochem., and Phys.Chem. 101, 102, 103 or 107-108, or consent of instructor) For laboratory see Course 173 (Not offered. Offered in 1952-53)
171. **Mineral Nutrition of Plants.** A study of the chemical elements necessary for plant nutrition and of their role in normal metabolism. Relationship of nutritional factors to other physiological processes. Deficiency and toxicity of mineral elements (3 cred.; sr., grad.; prereq. Bot. 51 or 140, 20 cred. in chem. or agr. biochem., and consent of instructor) For laboratory see Course 174 (Not offered. Offered in 1952-53)
- 172 **Plant Growth.** Study of hormonal physiology. Consideration of external factors influencing growth. Study of dormancy, germination, growth periodicities, movement of plants, and physiology of reproduction (3 cred.; sr., grad.; prereq. Bot. 51 or 140, 20 cred. in chem. or agr. biochem. or consent of instructor) For laboratory see Course 175 (Not offered. Offered in 1952-53)
- 173-174-175. **Advanced Physiology Laboratory** (2 cred. per qtr.; sr., grad.; to be taken with or after 170, 171, 172 respectively) (Not offered. Offered in 1952-53)

- 176f. Plant Respiration.** A study of the biochemical mechanism of carbohydrate degradation in plants with emphasis on fundamental aspects of biological oxidation (3 cred.; sr., grad.; prereq. Bot. 51 or 140, 20 cred. in chem. or agr. biochem., Phys.Chem. 101, 102, 103 or 107-108, or consent of instructor) For laboratory see Course 179. 9:00-10:30 a.m. TTh Brown, Frenkel
- 177w. Photosynthesis.** A detailed survey of the present state of knowledge of the photosynthesis of organic matter by plants (3 cred.; sr., grad.; prereq. Bot. 51 or 140, 20 cred. in chem. or agr. biochem., Phys.Chem. 101, 102, 103 or 107-108, or consent of instructor) For laboratory see Course 180. 9:00-10:30 a.m. TTh Brown, Frenkel
- 178s. Nitrogen Metabolism of Plants.** Conversion of inorganic nitrogen compounds into organic compounds. Nitrogen fixation. Interrelation with other metabolic processes of plants (3 cred.; sr., grad.; prereq. Bot. 51 or 140, 20 cred. in chem. or agr. biochem., or consent of instructor) For laboratory see Course 181. 9:00-10:30 a.m. TTh Brown, Frenkel
- 179f-180w-181s. Advanced Physiology Laboratory** (2 cred. per qtr.; sr., grad.; to be taken with or after 176, 177, 178 respectively) VI-X T; VI-X Th Brown, Frenkel
- 197f-198w-199s. Problems.** Advanced work in a specialized field (1 to 5 cred. per qtr.; jr., sr., grad.; prereq. 20 cred. in nat. sci. and permission of instructor) Ar. Ar. Ar.

For Graduate Students Only

- 201f-202w-203s. Research Problems in the Morphology of Vascular Plants.** Abbe
- 205f-206w-207s. Research Problems in Taxonomy and Floristic Plant Geography.** Ownbey, Morley
- 209f-210w-211s. Research Problems in Paleobotany.** Ar.
- 221f-222w-223s. Research Problems in Ecology.** Lawrence
- 225f-226w-227s. Research Problems in Plant Physiology.** Brown, Frenkel
- 239f-230w-231s. Research Problems in Cytology.** Dahl
- 240f-241w-242s. Seminar in Morphology.** Abbe
- 243f-244w-245s. Seminar in Taxonomy.** Ownbey, Morley
- 246f-247w-248s. Seminar in Paleobotany.** Ar.
- Agron.&Pl.Gen. 247w. Cytogenetics** (3 cred.; prereq. Bot. 119) Burnham
- 249f-250w-251s. Seminar in Ecology.** Lawrence
- 252f-253w-254s. Seminar in Plant Physiology.** Brown, Frenkel
- 255f-256w-257s. Seminar in Cytology.** Dahl

PLANT PATHOLOGY AND AGRICULTURAL BOTANY AND AGRONOMY AND PLANT GENETICS

The following courses in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine regularly carry credit in the College of Science, Literature, and the Arts without petition:

Agronomy and Plant Genetics 31, Principles of Genetics
Plant Pathology and Agricultural Botany 1, Plant Pathology

Students in this college may elect other courses in "Plant Pathology and Agricultural Botany" and "Agronomy and Plant Genetics" by arrangement with the departments concerned. See the *Bulletin of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine*.

CHEMISTRY

Institute of Technology

Department chairman—Lloyd H. Reyerson

Major adviser in the College of Science, Literature, and the Arts—Associate Professor Heisig, Assistant Professor Herr.

Major sequence in the College of Science, Literature, and the Arts—Anal.Chem. 1-2; Org.Chem. 61, 62, 63 and 64; Phys.Chem. 101-102-103 with appropriate amount of laboratory in Phys.Chem. 104-105-106.

(Prerequisites: Inorg.Chem. 13 with its prerequisites Inorg.Chem. 9, 10, and 12 or their equivalent; Phys. 7-8-9; mathematics through differential and integral calculus.)

Modification of this sequence may be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

In addition to the courses required for the major sequence, Arts students majoring in chemistry are advised to take 8 credits in advanced courses in chemistry, 2 credits of which are to be in laboratory work. 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 take sufficient courses in German to give a reading knowledge of the chemical literature.

Major adviser in the College of Education—Professor P. O. Johnson.

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

Note—Analytical Chemistry 1-2, 7 and all courses numbered above 50 count as Senior College courses.

INORGANIC CHEMISTRY

1f,w-2w,s,† General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals and metals and their compounds (4 cred. per qtr.; no prereq.)

1f-2w. Primarily for premedical, pre dental, and medical technology students) Lect. VI MWF Pervier; quiz VI T; lab. VI-IX Th; (S.L.&A., agriculture and education students) Lect. VIII MWF Barber; quiz VIII Th; lab. VII-X T

1w-2s. (Primarily for agriculture, engineering, and S.L.&A. students) Lect. II TThS Pray; quiz VII Th; lab. I-IV M

4f-5w,† General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals and metals and their compounds. More intensive than Course 1-2 (4 cred. per qtr.; prereq. entrance cred. in chem.) (Primarily for premedical and medical technology students) Lect. VII MWF Maynard; quiz VII T; lab. VI-IX Th (Pre dental, nursing education, public health nursing, and education students) Lect. VII MTTh Brasted; quiz VII F; lab. VII-X W; (Agriculture, education, and S.L.&A. students) Lect. VIII MWF Johnson; quiz VIII Th; lab. VII-X T

6f,w-7w,s,† General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals, metals, and their compounds (5 cred. per qtr.; no prereq.)

6f-7w. (Primarily for chemistry, pharmacy, and S.L.&A. students) Lect. II MWF O'Brien; lab. I-III TTh

6w-7s. (Primarily for chemistry, pharmacy, and S.L.&A. students) Lect. II TThF Johnson; lab. I-III MW

9f-10w,† General Inorganic Chemistry. Study of general laws of chemistry and of nonmetals, metals, and their compounds (5 cred. per qtr.; prereq. entrance cred. in chem.) (Primarily for chemistry and S.L.&A. chemistry majors) Lect. II MWF Sneed; lab. I-III TTh

11f. Semimicro Qualitative Analysis. Laboratory work in systematic qualitative analysis of the cations with lectures on solutions, ionization; chemical and physical equilibria, oxidation and reduction, etc. (4 cred.; prereq. 2, 5, 7, or 10) Lect. V MTF Barber; lab. II-V W

11w. Semimicro Qualitative Analysis (See 11f) Lect. V MTF Barber; lab. II-V W
11s. Semimicro Qualitative Analysis (See 11f) (For premedical, pre dental, medical technology, and physical education students) Lect. VI MWF Pervier; lab. VI-IX Th; (For S.L.&A. and education students) Lect. VIII MWF Barber; lab. VI-IX T; (For premedical and medical technology students) Lect. VII MWF Maynard; lab. VI-IX Th; (For pre dental, nursing education, and public health nursing students) Lect. VII MWF Brasted; lab. VII-X T

* To receive credit for any part of this course a student must complete the parts preceding the dagger

- 12f. **Semimicro Qualitative Analysis.** Laboratory work in systematic qualitative analysis of the cations with lectures on solutions, ionization, chemical and physical equilibria, oxidation and reduction, etc. (5 cred.; prereq. 2, 5, 7, or 10 (For chemistry and S.L.&A. chemistry majors) Lect. IV MWF Brasted; lab. III-V TTh
- 12s. **Semimicro Qualitative Analysis** (See 12f) (For chemistry, pharmacy and S.L.&A. chemistry majors) Lect. II MWF Snead; lab. I-III TTh
- 13f. **Semimicro Qualitative Analysis.** Laboratory work in systematic qualitative analysis of the anions with lectures on solutions, ionization, chemical and physical equilibria, oxidation and reduction, etc. (5 cred.; prereq. 12) (For chemistry and S.L.&A. chemistry majors) Lect. VI MWF Heisig; lab. VII-VIII M and VII-IX WF
- 52f-53w-54s. **Seminar: Modern Problems in Inorganic Chemistry** (1 cred. per qtr.; sr.; prereq. consent of instructor) VIII T Johnson
- 96f-97w-98s. **Senior Thesis** (5 cred. per qtr.) Ar. Ar. Ar.
- 102s. **Semimicro Qualitative Analysis.** A course designed to acquaint the student with the universally applicable method and underlying principles in the identification of the more common cations by use of drop reactions on spot plate and filter paper, and separation by use of the centrifuge (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2) Ar. Ar. Barber
- 103f-104w-105s. **Advanced Inorganic Chemistry.** Fall—Atomic structure and the properties of elements based thereon. Winter—Chemistry of the more representative elements. Spring—Coordination compounds (3 cred. per qtr.; jr., sr., grad.; prereq. Anal.Chem. 1-2 and Org.Chem. 62) VII MWF(f); III TThS(w); III MWF(s) O'Brien, Brasted, Maynard
- 106-107. *Chemistry of the Less Familiar Elements* (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2 and Org.Chem. 62) (Not offered in 1951-52. Offered in alternate years)
- 108s. **Nonaqueous Systems.** A study of principal nonaqueous systems—both protonic and aprotic systems. Theories of Bronsted, Lewis, and Usanovich are considered in detail (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2 and Org.Chem. 62) II MWF Pray
- 109w-110s. **Synthetic Inorganic Chemistry.** Methods of preparation and purification of inorganic compounds of special interest. Current literature (3 to 5 cred. per qtr.; jr., sr., grad.; prereq. Org.Chem. 63) Ar. Ar. Heisig

For Graduate Students Only

- 134f-135w-136s. **Seminar.** Modern problems in inorganic chemistry (1 cred. per qtr.) VIII T Johnson
- 301f-302w-303s. **Research in Inorganic Chemistry.** (Cred. ar.) Ar. Ar. Snead, Barber, Heisig, Maynard, O'Brien, Brasted, Johnson, Pray

ANALYTICAL CHEMISTRY

- 1w-2s.* **Quantitative Analysis.** Introductory courses covering the general principles and methods of quantitative analysis. Typical problems are assigned and attention is given to proper laboratory practice. 1w: Gravimetric Analysis. 2s: Volumetric Analysis (5 cred. per qtr.; soph., jr., sr.; prereq. Inorg.Chem. 13) Lect. VI M Meehan; quiz VI F; rec. VI W; lab. VII-IX MWF or VI-X T and VI-IX Th
- 7f. **Quantitative Analysis.** Introductory course covering the general principles and methods of quantitative analysis, both gravimetric and volumetric. Typical problems are assigned and attention is given to proper laboratory practice (4 cred.; primarily for premedical students; prereq. Inorg.Chem. 11 or 12) Lect. VI F Meehan; rec. VI W; quiz VI M; lab. VII-IX MWF; lect. VI T O'Connor; rec. I S; quiz VI Th; lab. VII-X T, VII-IX Th and 2 hrs. from I-III T or Th
- 7s. **Quantitative Analysis** (Primarily for premedical students) (Se-7f) Lect. VI T O'Connor; rec. I S; quiz VI Th; lab. VII-X T, VII-IX Th and 2 hrs. from I-III T or Th
- 9w. **Quantitative Analysis** (Primarily for dentists, engineers, and miners). A short introductory course covering general principles of quantitative analysis, both gravimetric and volumetric. Typical problems are assigned and attention is given to proper laboratory practice (3 cred.; prereq. Inorg.Chem. 11 or 12) I t. VI Th; rec. VI T; lab. VII-IX TTh O'Connor
- 96f-97w-98s. **Senior Thesis** (5 cred. per qtr.; sr.) Ar. Ar. Kolthof Sandell, Meehan

* Course 2s may precede 1w, if necessary.

- 101w-102s. Quantitative Analysis.** General principles, methods, and procedure of quantitative analysis, both gravimetric and volumetric. Typical problems are assigned and attention is given to proper laboratory practice (5 cred. per qtr.; jr., sr., grad.; prereq. Inorg.Chem. 13) VI-IX MWF Meehan
- 103s. Quantitative Inorganic Microanalysis.** Representative methods of micro- and semi-microgravimetric, volumetric, and colorimetric analysis (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2) VI F, lab. ar. Sandell
- 104f. Qualitative Inorganic Microanalysis.** Use of microscope. Technique of handling small amounts of materials, inorganic qualitative analysis by means of crystal reactions and modern spot reactions (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2) Lect. VI F, lab. ar. Sandell
- 105w. Polarizing Microscope.** Its use and application to chemistry. Identification of substances (3 cred.; jr., sr., grad.; prereq. Phys.Chem. 101) Lect. VI F, lab. ar. Sandell
- 106f-107w-108s. General Technical Analysis.** 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 (2 or 3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1, 2) Ar. Ar. Sandell
- 109f,w,s,§ Rock Analysis.** Laboratory course covering the technique of rock analysis (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2) Ar. Ar. Goldich
- 122f. Advanced Analytical Chemistry.** A condensed review of modern fundamentals of gravimetric and volumetric analysis (2 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2) III TTH Meehan
- 123f. Advanced Analytical Chemistry.** Analysis of complex materials by modern methods (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2 or permission of instructor) Ar. Ar. Meehan
- 127s. Optical Methods in Analytical Chemistry** (2 cred.; prereq. Phys.Chem. 103) III TTH Meehan
- 131f. Application of Indicators in Neutralization Reactions and pH Determinations** (3 cred. with lab., 2 cred. without lab.; jr., sr., grad.; prereq. Anal.Chem. 1-2 and Phys.Chem. 103) Lect. VI MW Kolthoff; lab. ar.
- 132w. Electrometric Measurements and Titrations.** Application of potentiometric and conductometric methods in analytical work (3 cred. with lab., 2 cred. without lab.; jr., sr., grad.; prereq. Anal.Chem. 1-2 and Phys.Chem. 103) Lect. VI MW Kolthoff; lab. ar.
- 133s. Voltammetry and Amperometric Titrations—Lecture course.** A discussion of the use of the dropping mercury electrode (polarograph) and the platinum microelectrode in pure and applied chemistry (2 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2 and Phys.Chem. 103) VI MW Kolthoff
- 134f,w,s. Voltammetry and Amperometric Titrations—Laboratory course** (2 cred.; jr., sr., grad.; prereq. credit in or registration in Anal.Chem. 133) Ar. Ar. Kolthoff
- 135f-136w-137s. Seminar: Modern Problems in Analytical Chemistry** (1 cred. per qtr.; jr., sr., grad.; prereq. Anal.Chem. 1-2, and Phys.Chem. 103) IV T Kolthoff
- 138s. Advanced Volumetric Analysis** (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 131) Ar. Ar. Kolthoff
- 140w. Water Analysis.** Analysis of potable water with interpretation of results (2 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2) Ar. Ar. Sandell

For Graduate Students Only

- 201f-202w-203s. Selected Topics in Analytical Chemistry** (3 cred. per qtr.; prereq. Anal. Chem. 1-2 and 123) Ar. Ar. Kolthoff
- 301f-302w-303s. Research in Quantitative Analysis (Cred. ar.)** Ar. Ar. Kolthoff, Sandell, Meehan

ORGANIC CHEMISTRY

- 61f-62w,† Elementary Organic Chemistry.** Discussion of important classes of organic compounds, both aliphatic and aromatic together with some heterocyclic compounds. Laboratory work includes the preparation of typical substances (4 cred. per qtr.; for chem., chem. engg., premedical, predental, and pharmacy students; prereq. 12-15 cred. in chem.) Lect. & MWF Ar.; lab. conference II T; quiz I T; lab. VI-IX T; VI-IX W; or I-IV Th; ect. III MWF Truett; lab. conference III S; quiz III Th; lab. VI-IX M; II-V T; VI-IX T; or VI-IX Th

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Registration limited. Permission of instructor must be obtained.

- 61w-62s.^f Elementary Organic Chemistry** (See 61f-62w) Lect. IV MWF Koelsch; lab. conference IV Th; quiz IV T; lab. VI-IX W; VI-IX Th; I-IV Th; or VI-IX F; lect. III MWF Ar.; lab. conference III T; quiz III Th; lab. VI-IX M; VI-IX T; VI-IX W; VI-IX Th; or VI-IX F
- 63f,s. Elementary Organic Chemistry**—Lecture course (3 cred.; prereq. 62. Continuation of 61-62) (Open to all except premedical, predental, and pharmacy students. Course 63 is prerequisite to all other advanced courses in organic chemistry) Lect. III MWF Parham; quiz III Th
- 64f,s. Elementary Organic Chemistry**—Laboratory course. Preparation of typical substances (3 cred.; must be accompanied or preceded by 63. Course 64 is prerequisite to all other advanced courses in organic chemistry) Lab. conference III S Parham; lab. II-IV and VI-VIII T or VI-VIII TTh
- 96f-97w-98s. Senior Thesis.** This course may be taken with any member of the Organic Chemistry Division staff (5 cred. per qtr.; sr.; prereq. 63-64 or equiv.) Ar. Ar. Ar.
- 101w. Organic Chemistry.** Intermediate organic chemistry. A survey course in which are considered important modern topics such as unusual types of aliphatic, aromatic and heterocyclic compounds, natural products, and industrial processes (3 cred.; jr., sr., grad.; prereq. 14 cred. in org. chem.) III MWF Lauer
- 102f. Organic Chemistry.** Characterization of organic compounds (elementary course). An introduction to the methods of organic qualitative analysis (3 cred.; jr., sr., grad.; prereq. one year of organic chemistry) (Registration limited. Permission of instructor must be obtained) Lect. III M Lauer; lab. VI-VIII M and either VI-VIII W or F
- 105f-106w-107s. Advanced Organic Chemistry.** Advanced descriptive course covering the field of organic chemistry, together with an introduction to the literature of organic chemistry. Lectures and outside reading. Ability to read German is assumed (3 cred. per qtr.; jr., sr., grad.; prereq. 63 and 64 or equiv.) IV MWF Smith
- 110f. Advanced Organic Qualitative Analysis.** (For graduate students) (3 cred.; prereq. 102 or equiv.) (Registration limited. Permission of instructor must be obtained) 9 laboratory hours per week. Ar. Koelsch
- 116. Heterocyclic Compounds.** Discussion of typical classes of heterocyclic compounds, their chemical and physical properties and uses, and the ring closures leading to heterocycles (3 cred.; prereq. 63 and 64) (Not offered in 1951-52. Offered in alternate years)
- 130s. Organic Quantitative Analysis.** Methods of proximate and ultimate analysis of organic compounds, with special attention to semimicro methods (3 cred.; prereq. 63 and 64 and Anal.Chem. 1 and 2) (Registration limited. Permission of instructor must be obtained) Lect. 1 hr. ar. Lauer; lab. 6 hrs. ar.
- 139f,w,s. Advanced Organic Chemistry Laboratory Work.** Selected laboratory problems of an advanced nature, including some original work (2 to 5 cred.; prereq. 63 and 64. Ability to read German is assumed. Students are advised to take this course during the winter quarter. Permission of instructor is required to take it at any other time) Ar. Ar. Arnold, Truett
- 140f. Aromatic Compounds.** Discussion of the chemistry of typical aromatic compounds including derivatives of benzene, naphthalene, anthracene, phenanthrene, and other polynuclear hydrocarbons, together with the consideration of certain heterocyclic compounds which show aromatic character. The properties of these compounds will be illustrated by examples chosen from the sterols and the alkaloids (3 cred.; prereq. 63 and 64) IV TThS Koelsch
- 141. Reagents in Organic Chemistry.** Discussion of typical reagents used in organic reactions; their limits of applicability, methods of use, and types of substances with which they react (3 cred.; prereq. 63 and 64) (Not offered in 1951-52. Offered in alternate years)
- 142w. The Chemistry of Natural Products.** Discussion of the organic chemistry of important classes of natural products (3 cred.; prereq. 63 and 64) I MWF Parham
- 151f-152w-153s. Organic Chemistry Seminar** (1 cred. per qtr.; sr.; prereq. consent of instructor) 7:45 p.m. to 8:45 p.m. W

For Graduate Students Only

- 201f-202w-203s. Organic Chemistry Seminar** (1 cred. per qtr.) (Required of all graduate students taking major work in organic chemistry) 7:45-8:45 p.m. W Ar.

^f To receive credit for any part of this course a student must complete the parts preceding the dagger.

- 205-206. Theoretical Organic Chemistry.** Structure, reaction mechanisms, relation of physical properties to constitution, and other topics of a theoretical nature (3 cred. per qtr.; prereq. 107) (Not offered in 1951-52. Offered in alternate years)
- 212s. Physico-Organic Chemistry.** Contributions made to organic chemistry by kinetic and equilibrium studies of organic reactions, including mechanisms of catalytic and ionotropic reactions; and an introduction to the current electronic formulations of organic reactions. Lectures, outside reading, and a term paper are required (4 cred.; prereq. 107, Phys.Chem. 103, and calculus, or permission of instructor) Ar. Ar. Ar.
- 301f-302w-303s. Research in Organic Chemistry** (Cred. ar.; prereq. 110 and permission of division) Ar. Ar. Ar.

PHYSICAL CHEMISTRY

- 96f-97w-98s. Senior Thesis** (5 cred. per qtr.) Ar. Ar. Ar.
- 101f-102w-103s. Physical Chemistry.** A general survey of the subject (3 cred. per qtr.; jr., sr., grad.; prereq. Anal.Chem. 1 and 2, Phys. 7-8-9 and mathematics through differential and integral calculus) (101 is prereq. to 102 and 102 is prereq. to 103) Lect. IV MWF Crawford, Lipscomb, Wertz; rec. IV S
- 104f-105w-106s. Physical Chemistry Laboratory.** (To accompany or follow Course 101-102-103) (1 or 2 cred. per qtr.) Lect. VI M Livingston, Wertz; lab. VII-VIII M and VI-VIII W; lect. VI Th Livingston, Wertz; lab. VI-VIII T and VII-VIII Th; lect. VI M Livingston, Wertz; lab. III-IV T and II-IV Th
- 107f-108w. Elementary Physical Chemistry** (3 cred. per qtr.; for premedical students only; prereq. two years college chemistry, one year college physics and Math. 15-16 or 6-7) Lect. IV MW Lipscomb; rec. IV F; lab. II-IV T or Th
- 110f. Experimental Research Techniques I.** Physical manipulations, including use of tools and machines as well as a course in glass blowing with demonstrations and practice (2 cred.; jr., sr., grad.; prereq. 103 and consent of instructor) Ar. Ar. Wertz
- 111w. Experimental Research Techniques II.** Materials of research, high vacuum technique, characteristics of thermionic tubes, rectifiers, amplifiers, oscillators, photocells (2 cred.; jr., sr., grad.; prereq. 110 and consent of instructor) Ar. Ar. Wertz
- 112s. Advanced Physicochemical Experiments.** This course will consist in the carrying out of a number of precise measurements in various fields such as thermochemistry, electromotive force, conductance, analysis of Raman spectra, surface tension, magnetic susceptibility, dielectric constant, characteristics of the photographic plate, and ionization potentials of a gas (2 cred.; jr., sr., grad.; prereq. 111 and consent of instructor) Ar. Ar. Wertz
- 113f. Fundamentals of Reaction Kinetics.** Empirical analysis of rate measurements, collision theory, transition state theory, chain reactions (3 cred.; jr., sr., grad.; prereq. 103) III TThS Livingston
- 114w. Kinetics of Reaction in Liquid and Heterogeneous Systems.** Effect of solvents and electrolytes on reaction velocity; diffusion processes; induced reactions; homogeneous and heterogeneous catalysis (3 cred.; jr., sr., grad.; prereq. 113) Ar. Ar. Livingston
- 116f. Advanced Physical Chemistry.** Thermodynamics. Designed to cover the fundamentals with application to chemical problems (3 cred.; jr., sr., grad.; prereq. 103) II TThS Crawford
- 117w. Advanced Physical Chemistry.** Thermodynamics of electrolytic solutions. Phase rule and applications. (3 cred.; jr., sr., grad.; prereq. 116) II TThS Livingston
- 118s. Advanced Physical Chemistry.** Elementary reaction kinetics. Methods of determining molecular structure with simple applications. Chemical and physical properties in terms of the nature of chemical bonds (3 cred.; jr., sr., grad.; prereq. 117) II TThS Lipscomb
- 120-121. Introduction to Molecular Structure.** Elementary quantum and statistical mechanics will be discussed and applied to the problem of the chemical bond (3 cred. per qtr.; jr., sr., grad.; prereq. Phys.Chem. 103 or equivalent) (Not offered in 1951-52. Offered in alternate years)
- 122w. Crystal Chemistry.** An elementary survey course in crystal chemistry. Crystals containing ionic, covalent and metallic bonds. Relation between crystal structures and chemical and physical properties. Glasses, fibers, and liquids (3 cred.; jr., sr., grad.; prereq. Phys.Chem. 103) II MWF Lipscomb
- 123-124. Crystal Analysis.** Theory and practice of X-ray crystallography. Methods and examples of structure determination. (3 cred. per qtr.; jr., sr., grad.; prereq. Phys. Chem. 103) (Not offered in 1951-52. Offered in alternate years)
- 128f. Colloid Chemistry.** The fundamental principles of colloid chemistry, surface chemistry, electrokinetic phenomena, lyophobic and lyophilic colloids (3 cred.; jr., sr., grad.; prereq. Phys.Chem. 103) IV MWF Reyerson

50 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 129w. **Adsorption and Catalysis.** The fundamental principles of adsorption at the different interfaces and the application of these principles to heterogeneous catalysis (3 cred.; jr., sr., grad.; prereq. 128) IV MWF Reyerson
130. **Colloids in Industry.** The important applications of colloid chemistry to many of the fields of chemical industry (3 cred.; jr., sr., grad.; prereq. 128) (Not offered in 1951-52. Offered in alternate years)
- 131s. **Colloidal Processes.** A survey of the important colloidal processes; coagulation, sol-gel transformation, thixotropy and dilatancy (3 cred.; jr., sr., grad.; prereq. 128) IV MWF Reyerson
- 132f-133w-134s. **Colloid Chemistry Laboratory** (1 or 2 cred.; jr., sr., grad.; prereq. 128) Ar. Ar. Reyerson
- 150f-151w-152s. **Physical Chemistry Seminar** (1 cred. per qtr.; sr.; prereq. consent of instructor) 7:30 p.m. M Livingston
- 161f-162w. **Nuclear Chemistry and Radioactivity.** The properties of nuclei, disintegration, properties of radiations; natural and artificial radioactivity; modern views of nuclear structure (3 cred. per qtr.; prereq. 103) III MWF O'Connor
175. **Photochemistry.** General survey, including a discussion of spectroscopy, with particular reference to the visible and ultraviolet absorption spectra of molecular gases (3 cred.; jr., sr., grad.; prereq. 103 and Phys. 9) (Not offered in 1951-52. Offered in alternate years)

For other courses in Physical Chemistry see the *Bulletin of the Institute of Technology*.

AGRICULTURAL BIOCHEMISTRY

Students in this college may elect courses in Agricultural Biochemistry by arrangement with the division. See the *Bulletin of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine*. Particular attention is called to the special sequence in Food Technology.

CHILD WELFARE

Institute of Child Welfare

Department chairman—John E. Anderson

Advisers in the College of Science, Literature, and the Arts—Professors Anderson, Harris, and Roff; Assistant Professor Templin.

Major advisers in the College of Education—Professor Anderson and Associate Professor Fuller.

For a specialized curriculum in Nursery School and Kindergarten Education, see the *Bulletin of the College of Education*.

Junior College Courses

- 10s. **Introduction to Child Study.** Orientation in child development through a survey of the preschool, parent education, and mental health approaches (2 cred.; 3rd qtr. fr., soph.; no prereq.) II TTh Cummings
- 40f.* **Child Training.** Development and training of young children. Observations in the demonstration schools (3 cred.; soph., jr., sr.; prereq. Psy. 1-2) VI TTh Fuller
- 40w.* **Child Training** (See 40f) V MW Peterson; VI TTh Fuller
- 40s.* **Child Training** (See 40f) VI TTh Fuller

Note—See also Family Life 25f,w,s (Child Development and Adjustment) under General Studies, page 70.

* Not open to Home Economics students, who should take Home Economics Education 90, which is offered fall and spring on the St. Paul Campus. See program of the College of Education.

Senior College Courses

Course 80 is open to sophomores who have an average grade of at least C in Psychology 1-2. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 80f,w,s. Child Psychology.** A science of child development and its applications (3 cred.; jr., sr.; prereq. Psy. 1-2) IV MWF Harris (f,w), Brieland (s)
- 130f. Motor, Linguistic, and Intellectual Development of the Child.** Interpretation of the scientific literature. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.) II MWF Roff
- 131w. Personality, Emotional, and Social Development of the Child.** Interpretation of the scientific literature (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.) II MWF Templin
- 132s. Later Childhood and Adolescence.** Growth; mental, social, emotional, and personality development (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.) II MWF Harris
- 140f. Behavior Problems in Younger Children.** Types, origin, development and treatment (2 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy. or soc.) VIII-IX Th Blodgett
- 140w. Behavior Problems in Younger Children** (See 140f) VIII-IX T Blodgett
- 141w. Behavior Problems in Older Children and Adolescents.** Types, origin, development, and treatment (2 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.) VIII-IX Th Blodgett
- 141s. Behavior Problems in Older Children and Adolescents** (See 141w) VIII-IX T Blodgett
- 142s. Psychology of Atypical Children.** Physical and mental deviations and handicaps; personal, social, and vocational adjustment (3 cred.; sr., grad.; prereq. 12 cred. in psy.) II TThS Blodgett
- 143f. Problems of Mental Deficiency.** Diagnosis, care, training; social and vocational problems; legal aspects (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.) III MWF Blodgett
- 150f-151w-152s. Childhood Education.** 150f: History and philosophy; 151w: Organization and administration; 152s: Methods and materials (2 cred. per qtr.; sr., grad.; prereq. 12 cred. in psy. or equiv.) VIII TTh Fuller
- 160w. Physical Growth and Development.** From early fetal life to maturity (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.) IV MWF Roff
- 166s. Maturity and Aging.** Developmental changes in the aging and aged; adjustment and care (2 cred.; sr., grad.; prereq. 15 cred. in psy., ed., or soc.) VIII-IX Th Anderson
- 170w. Parent Education.** Programs, materials, methods, organization and administration. Demonstrations of group procedures (3 cred.; sr., grad.; prereq. 15 cred. in child welfare or home econ. or ed. or psy. or soc. or public health) V MWF Cummings
- 185s. Children in a Changing World.** Effects of social change, depressions, wars, and catastrophes upon children (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.) VI MWF Templin
- 190s. Use and Interpretation of Tests for Children.** Survey of mental tests for social worker, teacher, etc. (2 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.) III-IV T Roff

For Graduate Students Only

- 200f,w. Observation and Study of Children** (1 cred.) Ar. Ar. Harris and staff
- 220f-221w-222s. Seminar in Current Research** (1 cred. per qtr.) IX-X W (meets alternate Wednesdays) Roff
- 223f-224w-225s. Seminar in Developmental Theory** (1 cred. per qtr.; permission of instructor) Ar. Ar. Anderson
- 226s. Seminar in Projective Methods with Children and Adolescents** (2 cred.; permission of instructor) Ar. Ar. Harris
- 227s. Multiple Factor Analysis** (2 cred.; permission of instructor) Ar. Ar. Roff
- 230f-231w-232s. Seminar in Recent Literature** (1 cred. per qtr.) IX-X W (meets alternate Wednesdays) Anderson, Templin
- 233w-234s. Research Methods** (2 cred. per qtr.) VII-VIII TTh Roff
- 240f-241w-242s. Practicum in Behavior Problems** (Cred. ar.; permission of instructor) Ar. Ar. Harris, Blodgett
- 250f,w,s. Internship in Professional Work with Children.** Experience under qualified supervision (Cred. ar.; prereq. permission of instructor) Ar. Ar. Anderson
- 270f-271w-272s. Readings and Research in Child Development** (Cred. ar.) Ar. Ar. Anderson and others

52 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 274w-275s. **Technique and Field Work in Parent Education** (Cred. ar.; permission of instructor) Ar. Ar. Cummings
290w-291s. **Mental Examination of Preschool Children** (4 cred. per qtr.; permission of instructor) Ar. Ar. Blodgett

Note—See also Courses Ed.T. 55-58, 76, 77-78-79, offered by the Institute of Child Welfare and listed under Methods and Directed Teaching in the program of the College of Education.

CHINESE

Department chairman—To be announced

- 1f-2w-3s. **Beginning Chinese**. 1f-2w: Conversational exercise in the national language (Mandarin), and introduction to script and reading; 3s: Selected readings in colloquial style (15 cred.; no prereq.) V MTWThF Mather
51f-52w-53s. **Intermediate Chinese**. 51f-52w: Contemporary Chinese newspaper; 53s: Traditional Chinese texts (9 cred.; jr. sr.; prereq. 1-2-3) Ar. Ar. Mather
101f-102w-103s. **Advanced Chinese**. Readings in Chinese historical, documentary, literary, philosophical, or philological texts, selected according to the student's needs (6 cred.; prereq. 51-52-53 or equiv.) Ar. Ar. Mather
110s. **Chinese Literature in Translation**. A survey in the best available English translations of Chinese belles-lettres from the first millennium B.C. to the present (3 cred.; prereq. 8 cred. in literature. Knowledge of Chinese not required) Ar. Ar. Mather

CLASSICS

Department chairman—Norman J. DeWitt

Major adviser in the College of Science, Literature, and the Arts—Professor DeWitt; Associate Professor McDonald.

Major sequences in the College of Science, Literature, and the Arts—

GREEK

Twenty-seven credits in Greek courses numbered above 50 or eighteen credits in such courses with (a) nine credits in Latin courses numbered above 50, or (b) Hist. 14A-15A-16A and nine credits chosen from Classics 106-107-108, 191-192-193, Hist. 100-101-102, 100a-101a-102a, 100b-101b-102b.

LATIN

Twenty-seven credits in Latin courses numbered above 50, or 18 credits in such courses with (a) nine credits in Greek courses numbered above 50, or (b) Hist. 14A-15A-16A and nine credits chosen from Classics 106-107-108, 191-192-193, Hist. 100-101-102, 100a-101a-102a, 100b-101b-102b.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education—Professor DeWitt

Requirements for a teacher's certificate in Latin—Major recommendation: Courses 73, 81-82-83, 111-112-113, and Hist. 14A-15A-16A.

Minor recommendation: Courses 73, 81, and Hist. 14A-15A-16A.

To secure a recommendation from the department to take Special Methods and Directed Teaching in Latin a student must make a grade of C or better in Course 73.

GREEK

Junior College Courses

Greek 1f-2w.† Beginning Greek (10 cred.; no prereq.) II MTWThF McDonald

Greek 3s. Selections from Attic Prose (5 cred.; prereq. 1-2) II MTWThF McDonald

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

Senior College Courses

Courses 51, 52, 53, 73 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24. Students who continue Greek in the Senior College will enroll in Greek 171, 172, 173, "Independent Reading." The subject matter of this course will be varied to meet the needs of the individual student.

Greek 51f. Lucian (3 cred.; jr., sr.; prereq. 1-2-3 or equiv.) IX MWF Ar.

Greek 52w. Homer (3 cred.; jr., sr.; prereq. 1-2-3 or equiv.) IX MWF Ar.

Greek 53s. Plato, Apology and Selections (3 cred.; jr., sr.; prereq. 1-2-3 or equiv.) IX MWF Swanson

Greek 73s. New Testament (3 cred.; jr., sr.; prereq. consent of dept.) Ar. Ar. Ar.

Greek 121f-122w-123s.† Advanced Prose Composition (9 cred.; jr., sr., grad.; prereq. 24 cred. in Greek) Ar. Ar. Ar.

Greek 171f,*172w,*173s.* Independent Reading in (e.g., Aeschylus, Sophocles, Pindar, Herodotus, Thucydides, Hellenistic prose) (3 cred. per qtr.; prereq. 53 or consent of the department) Ar. Ar. Swanson

For Graduate Students Only

Greek 201f-202w-203s. Graduate Seminar: Greek Literary Bibliography and Criticism (9 cred.) Ar. Ar. Swanson

Greek 241-242-243. Graduate Seminar: Greek Historians (9 cred.) (Not offered in 1951-52. Offered in alternate years)

Courses for Which No Knowledge of Greek Is Required

(See page 54.)

LATIN

Junior College Courses

Lat.1f-2w.† Beginning Latin (10 cred.; no prereq.) IV MTWThF Swanson

Lat.3s. Intermediate Latin (5 cred; prereq. 1-2, or 1 yr. of high school Latin) IV MTWThF Forbes

Lat.21f. Introduction to Latin Reading. A review of basic grammar with graded reading (5 cred.; prereq. 1 or 2 yrs. of high school Latin, or consent of department) III MTWThF Ar.

Lat.30f,w. Selected Readings from Prose and Poetry (5 cred.; prereq. 3 or 21, or 3 yrs. of high school Latin, or consent of the department) IV MTWThF Forbes

Lat.40w,s. Vergil (5 cred.; prereq. 30, or 3 yrs. of high school Latin, or consent of the department) III MTWThF Forbes

Senior College Courses

Courses 73, 81-82-83 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24. Students who continue Latin in the Senior College will enroll in Lat. 171, 172, 173, "Independent Reading." The subject matter of this course will be varied to meet the needs of the individual student.

Lat.73s. Prose Composition (2 cred.; prereq. 3 or 4 yrs. of high school Latin or consent of department) Ar. Ar. Ar.

Lat.81f-82w-83s.§ Survey of Latin Literature (9 cred.; jr., sr.; prereq. 40, or 4 yrs. of high school Latin or consent of dept.) II MWF Ar.

Lat.111f-112w-113s.† Advanced Prose Composition (2 cred. per qtr.; jr., sr., grad.; prereq. 73) II TTTh Ar.

* Since the authors to be read vary from term to term and from year to year, this course may be repeated for credit.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Students may enter any quarter.

54 COURSE OFFERINGS AND MAJOR REQUIREMENTS

Lat.133s. Vulgar Latin (Development of Latin into Romance) (3 cred.; jr., sr., grad.; open to advanced students of Latin or a Romance language with the consent of instructor) III MWF Swanson

Lat.171f,*172w,*173s.* Independent Reading in (e.g., Plautus, Horace, Lucretius, Juvenal, Cicero, Livy, Tacitus, Suetonius (3 cred. per qtr.; prereq. 83 or consent of department) Ar. Ar. Ar.

For Graduate Students Only

Lat. 211f-212w-213s. Graduate Seminar: The Latin Epic (9 cred.) Ar. Ar. McDonald

Lat. 251-252-253. Graduate Seminar: Roman Drama (9 cred.) (Not offered in 1951-52. Offered in alternate years)

Courses for Which No Knowledge of Greek or Latin Is Required

Hist.14Af-15Aw-16As. Ancient Civilization with Basic Readings (15 cred.; no prereq.) VII TWTh Jones and VII MF Ar.

Classics 24s. Technical Terms of Science, Medicine, and the Humanities. Presentation in English contexts of Greek and Latin prefixes, suffixes, and root words basic in modern technical vocabularies (3 cred.; soph., jr., sr.; no prereq.) IV MWF Swanson

Classics 31f,32w.8 Greek and Latin Drama. Representative tragedies and comedies of the Greek and Latin dramatists are read and discussed. Lectures on the origin and development of the ancient drama and its relation to modern drama (2 cred. per qtr.; soph., jr., sr.; no prereq.) IV MW McDonald

Classics 42f. Greek Mythology. The origin and development of myths (2 cred.; soph., jr., sr.; no prereq.) V MW Ar.

Classics 43w. Ancient Mythology in Relation to Literature and Art (2 cred.; soph., jr., sr.; no prereq.) V MW Ar.

Classics 106f-107w. Introduction to the Study of Language (3 cred. per qtr.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language) VIII MWF Swanson

Classics 108s. Cultural Aspects of Language (3 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language) VIII MWF Swanson

Classics 122w. Introduction to Greek Archeology. The methods and techniques of modern field archaeology; the history of major excavations at sites dating from the neolithic period down to the Roman conquest of the eastern Mediterranean; the chronological development and the regional peculiarities of architecture, sculpture, painting and other special fields. Illustrated lectures, readings, and student reports (3 cred.; jr., sr., grad.; no prereq.) VIII MWF McDonald

Classics 123s. Introduction to Roman Archeology. Continuation of Classics 122w, covering pre-Roman Italy and following the expansion of Roman power in the entire Mediterranean and adjacent areas (3 cred.; jr., sr., grad.; no prereq.) VIII MWF McDonald

Classics 191f,192w,193s. Classical Literary Traditions. Readings from classical literature, with lectures on the origin of literary forms and their traditions in European literature. Topics include: (fall) epic, didactic, choral and personal poetry; (winter) drama and dramatic prose (dialog); (spring) expository and narrative prose including the novel, literary criticism (3 cred. per qtr.; jr., sr., grad.; prereq. 9 cred. in literature, English (beyond A-B-C) or foreign literature) IV MWF DeWitt

COMMUNICATION

See General Studies, page 69.

COMPOSITION

See English, page 67.

DRAWING AND DESCRIPTIVE GEOMETRY

Department chairman—Henry C. T. Eggers

* Since the authors to be read vary from term to term and from year to year, this course may be repeated for credit.

§ Students may enter either quarter.

Junior College Courses

44f,w,s. Lettering. A practical course in plain lettering (1 cred.; no prereq.) IV T Ar.
45f,w,s. Alphabets. Construction and analysis of classic and modern roman, italic, script, and gothic styles, including Old English. Exercises in composition. Reference work (2 cred.; soph., jr., sr.; prereq. 44) III TTh Ar.

Many of the courses which were previously listed under Drawing and Descriptive Geometry are now included in the Department of Art. (See page 30.) Other courses offered by this department and listed in the *Bulletin of the Institute of Technology* are open to students of this college only by special permission of the Students' Work Committee.

ECONOMICS

School of Business Administration

Courses in economics are available to Science, Literature, and the Arts students and may be applied toward an Economics major or minor for a degree from this college. Students contemplating graduate work in the field and those desiring a four-year liberal arts program may prefer this arrangement.

Those wishing to specialize in business administration will transfer after two years to the School of Business Administration. For the prerequisites for entrance into the latter school, see page 159 of this bulletin and for the B.A. course offerings, see the *Bulletin of the School of Business Administration*.

Department chairman—Richard L. Kozelka

Major advisers in the College of Science, Literature, and the Arts—Associate Professor Papandreu; Assistant Professor Stovel.

Major sequence in the College of Science, Literature, and the Arts—A student majoring in economics is required to earn at least 30 credits in Senior College courses as follows: (1) required courses: Econ. 73 (or 161), 80-81, 85; (2) at least 6 credits from Econ. 64 (or 142), 75 (or 155), 105, 106, 149, 176; (3) at least 6 credits from Econ. 110, 185, 190, 191-192, 195; and (4) 6 additional credits from any Senior College economics courses listed in this bulletin. Students who expect to take postgraduate work in business or economics in this or another university are advised to include in their program the following courses: Econ. 5 and 121-122-123 in statistics; and Econ. 24, 25, 26 in accounting.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

(Prerequisites: Econ. 3 and 6-7. In addition the student is urged to earn at least 9 credits in history, political science, or sociology.)

Honors course—Students whose records show that they are capable of doing better than average work, and who wish to study for graduation honors or to pursue a special interest should consult a major adviser for modification of the sequential requirements.

Junior College Courses

1f-2w. Business History. A historical examination of the development of the chief kinds of business activity; organization of production, transportation and marketing; changes in technique; and government policies affecting business enterprise. The course will be mostly European and American in scope, but significant developments in other continents will be surveyed (10 cred.; fr., soph.; no prereq.) Lect. III TTh Heaton and others; rec. sections as follows: I MWF; II MWF; III MWF; IV MWF; V MWF; VI MWF; VII MWF

56 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 3f. **Elements of Money and Banking.** The basic principles of money and a description of the various types of financial institutions, their functions and relations to the whole economic organization (5 cred.; *B.A. 57; 2nd and 3rd qtr. fr., soph.; no prereq.) Lect. VII TTh Stehman and others; rec. sections as follows: II MWF; III MWF; IV MWF; VI MWF; VII MWF
- 3s. **Elements of Money and Banking** (See 3f) Lect. III TTh; rec. sections as follows: I MWF; II MWF; III MWF; IV MWF; V MWF; VI MWF; VII MWF
- 5f. **Elements of Statistics.** Elementary concepts in statistical method; averages, ratios, errors, sampling, index numbers, graphic representation, collection of material (5 cred.; *Soc. 45, B.A. 70; soph.; no prereq.) Lect. II Th Kozelka and others; rec. sections as follows: I MTWF; II MTWF; IV MTWF; VI MTWF; VII MTWF
- 5w. **Elements of Statistics** (See 5f) II MTWThF; VII MTWThF
- 5s. **Elements of Statistics** (See 5f) Lect. II Th; rec. sections as follows: I MTWF; II MTWF; IV MTWF; VI MTWF; VII MTWF
- 6f-7w.** **Principles of Economics.** A course in the fundamental principles of economics intended to serve as a foundation for advanced courses in business administration and economics (10 cred.; *Econ. 8-9, 62-63; soph., jr., sr.; no prereq.) Lect. I TTh S. Smith and others; rec. sections as follows: I MWF; II MWF; III MWF; IV MWF; V MWF; VI MWF; VII MWF; VIII MWF
- 6w-7s.** **Principles of Economics** (See 6f-7w) Lect. VII TTh; rec. sections as follows: I MWF; II MWF; IV MWF; VI MWF; VII MWF
- 6s. **Principles of Economics** (1st qtr. of 6-7. See 6f-7w) Lect. I TTh; rec. sections as follows: II MWF; IV MWF; VII MWF
- 7f. **Principles of Economics** (2nd qtr. of 6-7. See 6f-7w) II MTWThF; VI MTWThF
- 24f-25w-26s. **Principles of Accounting.** The balance sheet, profit and loss statement, the recording process, special journals and ledgers, adjustments, work sheets, closing and the voucher system, partnership, profit-sharing, dissolution, corporation accounting stock surplus, dividends, reserves, funds and bonds, departmental accounting, branch accounting, manufacturing statement analysis and interpretation (9 cred.; *B.A. 54-55; soph.; no prereq.) I MWF; II MWF; III MWF; IV MWF; V MWF; VI MWF; VII MWF; VIII MWF Heilman and others
- 24w-25s.8 **Principles of Accounting** (1st and 2nd qtrs. of 24-25-26. See 24f-25w-26s) I MWF; IV MWF; VII MWF
- 24s. **Principles of Accounting** (1st qtr. of 24-25-26. See 24f-25w-26s) III MWF
- 25f. **Principles of Accounting** (2nd qtr. of 24-25-26. See 24f-25w-26s) III MWF
- 26f. **Principles of Accounting** (3rd qtr. of 24-25-26. See 24f-25w-26s) II MWF
- 27s. **Accounting Survey.** A course designed for prelaw and law students. Special emphasis on accounting for corporations and for income (5 cred.; soph.; *24-25, B.A. 54; no prereq.; open to prelaw and law students only) I MTWThF
- 32f. **Beginning Typewriting.** Proper techniques for operating a typewriter by the touch method; brief survey of letter forms, and practice in arrangement of letters; points to be observed in manuscript typing; care of typewriter (1 cred.; fr., soph., jr., sr.; no prereq.) I MTWThF; II MTWThF; IV MTWThF; VII MTWThF Donaldson and others
- 32w. **Beginning Typewriting.** (See 32f) I MTWThF; VI MTWThF; VII MTWThF
- 32s. **Beginning Typewriting.** (See 32f) I MTWThF; VI MTWThF; VII MTWThF
- 33f.|| **Intermediate Typewriting.** Practice in letter arrangement and envelope addressing; use of carbons; problems in setting up and typing tabulation; experience in manuscript typing (1 cred.; *Econ. 34; fr., soph., jr., sr.; prereq. a speed of 30 words a minute) I MTWThF; IV MTWThF Donaldson and others
- 33w,s. **Intermediate Typewriting.** (See 33f) I MTWThF; IV MTWThF
- 34f. **Typewriting Procedures.** Machine transcription; operation of electric typewriters and duplicating machines; use of footnotes, bibliographies, proofreading, and arrangement in manuscript typing; legal documents and office forms; tabulation (2 cred.; soph., jr., sr.; prereq. 33 or equiv. and speed of 45 words a minute) VI MTWThF Peterson
- 34s. **Typewriting Procedures.** (See 34f) IV MTWThF

* Credit is not given if the equivalent course listed after the * has been taken for credit.

§ Students who have had a high school course or experience in bookkeeping may be admitted to Econ. 25 by passing a placement test which is normally given the first day of the quarter.

† No credit will be granted for Econ. 33 until Econ. 34 is completed.

** Economics 3 is a desirable preceding course.

- 37f-38w-39s.†** Shorthand.** An elementary course in Gregg shorthand simplified. A large vocabulary of high-frequency words is developed. Emphasis is placed on transcription of mailable letters (9 cred.; soph., jr.; prereq. 33 or consent of instructor) II MTWThF; III MTWThF Donaldson and others
- 37w-38s.** Shorthand** (1st and 2nd qtrs. of 37-38-39. See 37f-38w-39s) II MTWThF (w); III MTWThF (s)
- 40f-41w.† Advanced Shorthand and Secretarial Procedure.** A vocabulary of frequently used words and technical terms is developed for use in dictation and transcription at rates characteristic of modern office situations. Students are trained in secretarial problems in communicating, banking, editing, traveling, and using reference books (6 cred.; soph., jr., sr.; prereq. 34 and 39 or consent of instructor) III MTWThF Peterson, Riley
- 42s. Advanced Secretarial Procedure.** Vocabulary building of technical terms; dictation based on letters for special industries, and Gregg dictation tests at 110 to 140 words a minute; readings and problems in secretarial procedures (3 cred.; soph., jr., sr.; prereq. 34 and 41 or consent of instructor) II MTWThF Peterson
- 43f. Shorthand Theory.** A study of Gregg shorthand principles, both simplified and anniversary editions. Experience in the techniques of dictating and blackboard writing. This course is designed for majors in business education (2 cred.; soph., jr., sr.; prereq. 34 and 39 and consent of instructor) IX-X T Donaldson

Senior College Courses

Senior College courses with numbers less than 100 are open to third quarter sophomores who have an average grade of at least C in the pre-requisite courses.

- 50f,w,s. Insurance Principles.** An introductory course dealing with the nature and measurement of risk and the development and uses of personal, property, and liability insurance. Forms of protection; policy contracts; social insurance and government regulation (3 cred.; jr., sr.; prereq. 7 or equiv.) IV MWF; VIII MWF Graves and others
- 62f,†* Competition and Monopoly in Modern Industry.** A nontechnical analytical course for Senior College students, with special emphasis on questions of economic policy. It is devoted to national income, the pattern of consumption, the effects of competition and monopoly on prices and the allocation of resources, and labor unions (3 cred.; \$Econ. 6, 8; jr., sr.; no prereq.) I MWF Gray, McKenna
- 63w,†* Money, Cycles, and Taxation.** The money and banking system, fluctuations in business, and proposed remedies; government expenditures and revenues (3 cred.; \$Econ. 7, 9; jr., sr.; prereq. 62) I MWF H. Smith
- 64f. Economics of Money and Banking.** A second course in money and banking. Banking policy viewed from the social standpoint with primary reference to the problems of the Federal Reserve system. Selected problems in monetary policy; monetary reconstruction and monetary reform (3 cred.; \$Econ. 142; jr., sr.; prereq. 3 and 7 or equiv.) I MWF; III MWF; V MWF H. Smith and others
- 64w. Economics of Money and Banking** (See 64f) III MWF; IV MWF; VIII MWF
- 64s. Economics of Money and Banking** (See 64f) I MWF; III MWF; VIII MWF
- 73f. Manpower Economics and Labor Problems.** This course deals with: (1) the marketing of manpower resources; (2) the institutional structure of labor markets; (3) economic and social problems arising out of labor marketing processes; (4) methods, procedures and proposals for solving these problems (3 cred.; \$Econ. 161; jr., sr.; prereq. 7 or equiv.) Lect. II T Yoder and others; rec. sections as follows: I TTh; III TTh; IV TTh; VI TTh; VII TTh
- 73w. Manpower Economics and Problems** (See 73f) Lect. III T, rec. sections as follows: I TTh; II TTh; IV TTh; VI TTh

* Econ. 62 and 63 are not accepted as substitutes for Econ. 6-7 in meeting prerequisite requirements for Senior College courses.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Credit is not given if the equivalent course listed after the § has been taken for credit.

¶ This course may not be included as a part of the Senior College work required for a minor in economics in the College of Science, Literature, and the Arts.

** Students who have had one year of high school shorthand are admitted to Econ. 38; those who have had two years of high school shorthand are admitted to Econ. 39.

58 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 73s. **Manpower Economics and Problems** (See 73f) Lect. II T; rec. sections as follows: I TTh; IV TTh; VI TTh; VII TTh
- 75f. **Corporation Finance**. The corporation in comparison with other types of business units. Attention is given to such subjects as organization and capital structure, raising fixed and circulating capital, treatment of corporate earnings, incentives to and forms of combination, and trusteeship and reorganization (3 cred.; §Econ. 155; jr., sr.; prereq. 3 and 7 or equiv.) I MWF; III MWF; VI MWF Stehman and others
- 75w. **Corporation Finance** (See 75f) I MWF; III MWF; VII MWF
- 75s. **Corporation Finance** (See 75f) III MWF; IV MWF; VII MWF
- 80f-81w.† **Intermediate Economic Analysis**. Development and application of methods of economic analysis to problems of price and production under conditions of competition, monopoly and monopolistic or imperfect competition (6 cred.; §Econ. 103-104; jr., sr.; prereq. 20 cred. in soc. sci. including 7 or equivalent) I MWF; II MWF; III MWF; IV MWF; V MWF; VII MWF; VIII MWF McKenna and others
- 80w-81s.† **Intermediate Economic Analysis** (See 80f-81w) I MWF; III MWF; VI MWF
- 81f. **Intermediate Economic Analysis** (See 80f-81w) I MWF
- 84s. **Comparative Economic Systems**. The modified system of individualism; state socialism; communism; fascism; freedom and the economic order. Emphasis is placed not upon historical development, but upon the vital economic functions to be achieved under any economic system and a critical analysis of the ability of the various systems to perform these functions (3 cred.; jr., sr.; prereq. 7 or equiv.) III MWF Boddy
- 85f. **Government Regulation of Business**. A general course on the economic aspects of legislation affecting the pricing process and the distribution of the national income. Topics studied include economic origins of modern business limitations on free competition; regulation of public utilities, trusts and combinations, and "unfair competitive practices"; positive assistance to industrial groups (3 cred.; jr., sr., grad.; prereq. 7 or equiv.) I MWF; III MWF; VI MWF Boddy and others
- 85w. **Government Regulation of Business** (See 85f) I MWF
- 85s. **Government Regulation of Business** (See 85f) I MWF; III MWF; VII MWF Ar.
- 97f,98w,99s. **Honors Course in Economics** (Cred. ar.; jr., sr.; prereq. consent of major advisers) Ar. Ar. Ar.
- 103f-104w.† **Advanced Economic Theory**. An advanced course in general economic theory with special emphasis on the systematic development of the tools of modern economic analysis (6 cred.; §Econ. 80-81; jr., sr. with honor point ratio of 2 or better, grad.; prereq. 20 cred. in soc. sci. including 7 or equiv.) VII MWF Boddy
- 105f. **The Development of Economic Thought: Classical Theory**. This course is intended to be the first of a series of three. This course will study the writings of the precursors and the later developers of classical economic theory, roughly from Adam Smith to John Stuart Mill. The materials used in the course will be a wide reading in the important, original works of the men studied (3 cred.; jr., sr., grad.; prereq. 104) IV MWF Boddy
- 106w. **The Development of Economic Thought: Socialistic Critics and Neo-Classical Theory**. This course will begin with Karl Marx and go through the Austrians, Marshall, Edgeworth, and Pigou (3 cred.; jr., sr., grad.; prereq. 104) IV MWF Papandreou
- 107s. **Schools of Economic Thought: Theories of Effective Demand**. This course will begin with Malthus and Say, and continue with Hobson, Major Douglas and Keynes (3 cred.; jr., sr., grad.; prereq. 104) VI MWF McKenna
110. **Industrial Price Control**. The methods by which the prices of industrial products are determined under actual competitive conditions. Price policies, combinations, international cartels, administered prices, price leadership, price associations, and government intervention (3 cred.; jr., sr., grad.; prereq. 7 or equiv. and 15 additional credits in econ. and/or bus. adm.; Econ. 75 or 155 is a desirable preceding course) (Not offered in 1951-52)
- 121f-122w†-123s. **Theory of Statistics**. An advanced course in statistical analysis. The first quarter is designed to acquaint the student with modern statistical tools and their uses in the analysis and interpretation of data and does not stress mathematical developments. Emphasis is upon basic logic of procedures. Later quarters add consideration of origins and deviations, and more mathematical preparation is then desirable (9 cred.; jr., sr., grad.; prereq. 5 or equiv.) II MWF Mudgett

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Credit is not given if the equivalent course listed after the § has been taken for credit.

- 126s. Economic Problems of Latin America.** The development of economic resources; influence of foreign economies; organization for production; state of the industrial arts; domestic markets and transportation; government finance; present tendencies in respect to economic progress, economic security, and social control (3 cred.; jr., sr., grad.; prereq. 7 or equiv.) VII MWF
- 140w. The Cooperative Movement.** The history and philosophy of various cooperative developments. Similarities and contrasts between such movements as agricultural marketing cooperatives, consumer cooperatives, trade unions, and others. Consumer cooperation as a medium for economic control (3 cred.; jr., sr., grad.; prereq. 7 or equiv.) VI MWF Canoyer
- 142f. Monetary and Banking Policy.** An advanced course in money and banking. Banking policy viewed from the social standpoint with primary reference to the problems of the Federal Reserve system. Selected problems in monetary policy; monetary reconstruction and monetary reform (3 cred.; §Econ. 64; jr., sr. with consent of instructor, grad.; prereq. 3 and 7) III MWF H. Smith
- 149f. Business Cycles.** Analysis of factors involved in business fluctuations. Comparison of theories of their causes. Examination of proposals for the stabilization of employment, production and capital formation. Introduction to the statistical data and methods of business forecasting (3 cred.; sr., grad.; prereq. 64 or 142 or consent of instructor) III MWF; IV MWF Upgren and others
- 149w. Business Cycles** (See 149f) III MWF
- 149s. Business Cycles** (See 149f) IV MWF; VI MWF
- 155w. The Modern Corporation.** Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporations. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations (3 cred.; §Econ. 75; jr., sr. with consent of instructor, grad.; prereq. 3 and 7) VIII MWF Stehman
- 161f. General Manpower Economic and Labor Problems.** (1) The marketing of manpower resources; (2) the institutional structure of labor markets; (3) economic and social problems arising out of labor marketing processes; (4) methods, procedures and proposals for solving these problems. This course includes the basic materials of Econ. 73 plus advanced discussion and special assignments (3 cred.; §Econ. 73; jr., sr. with consent of instructor, grad.; prereq. 7 or equiv.) Lect. II T; rec. III TTh Yoder and others
- 161w. General Manpower Economic and Labor Problems.** (See 161f) Lect. III T; rec. VI TTh
- 161s. General Manpower Economic and Labor Problems** (See 161f) Lect. II T; rec. VI TTh
- 162f. Labor Movements.** This course is designed to present an analysis of the development of labor movements in Europe and the United States. It includes an examination of the origins of labor movements, their growth, the problems faced under various forms of governments, and an analysis of the economic and social consequences of these developments (3 cred.; jr., sr., grad.; prereq. 73 or 161) I MWF Ulman
- 163w. Union Organization and Administration.** This course is designed to provide an analysis of: (1) the structural nature and (2) the operation of contemporary American unions. In the latter connection the course deals with the nature of the internal administration and government of unions, and with the economic and social issues arising out of relationships with managements as found in matters of hours, wages, and other conditions of employment (3 cred.; jr., sr., grad.; prereq. 73 or 161) III MWF Ulman
- 164f. Labor Legislation: Collective Bargaining.** This course is designed to provide an analysis of: (1) the inter-relationships between the development of labor organizations and the techniques utilized by them in furthering their interests, and the actions and decisions of the executive, legislative, and judicial branches of the government, and (2) the economic and social implications of issues arising in this area (3 cred.; jr., sr., grad.; prereq. 73 or 161) III MWF Ulman
- 166s. Settlement of Industrial Disputes.** Major consideration in this course is given to the economic impact and implications of principal methods of settling labor disputes, including mediation, conciliation, fact-finding and voluntary and compulsory arbitration (3 cred.; jr., sr., grad.; prereq. 73 or 161) VII MWF Turnbull

[§] Credit is not given if the equivalent course listed after the § has been taken for credit.

60 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 169w. **Labor Legislation: Economic Security.** This course is designed to provide an analysis of: (1) the origins and development of economic and social problems of the individual worker, (2) executive, legislative, and judicial attempts to deal with these problems, and (3) economic and social consequences of the developments. The course centers upon treatment of the area of so-called "protective labor legislation," involving child labor, hours and wages, industrial accidents and illness, old age, and unemployment (3 cred.; jr., sr., grad.; prereq. 73 or 161) IV MWF Turnbull
- 172f. **Economics of Transportation.** An analysis of the economics of the agencies of modern transportation, including rail, water, highway, air, and pipe line. Relative advantage of each agency, national transportation policy, regulation, rate-making, taxation, coordination of services (3 cred.; §B.A. 71; jr., sr., grad; prereq. 20 cred. in soc. sci. including Econ. 7 or equiv.) III MWF Nightingale
- 176f. **An Introduction to International Economics.** An introduction to the techniques of international economic analysis. The approach, while primarily theoretical, will indicate the relevance of the theory to current problems. The balance of payments; the foreign exchanges; free trade versus protection; techniques of trade control; international commercial policies; contemporary international economic problems and institutions (3 cred.; jr., sr., grad.; prereq. 7) II MWF; VII MWF Upgren and others
- 176s. **An Introduction to International Economics (See 176f)** II MWF
- 178w. **Economics of Consumption.** A descriptive and analytical treatment of: the nature of human wants; the origins and the personal distribution of money income and purchasing power; demand and price; standards and levels of living; relationship of consumption to the population problem and possibilities for improvement in the plane of consumption (3 cred.; jr., sr., grad.; prereq. 7 or equiv.) VIII MWF Canoyer
- 179s. **Economic Problems of the Far East.** A survey of recent economic developments in the Far East, especially in China and Japan. The ways in which these developments illustrate and are governed by economic principles are examined. Economic regionalism, problems of population and migration, the control of raw materials, industrial efficiency, internal economic institutions, and international commercial policies, as they occur in the Far East, are among the topics discussed (3 cred.; jr., sr., grad.; prereq. 7 or equiv.) VI MWF Vaile
- 185w. **Economics of Marketing.** A course dealing with (1) the role of market distribution in our total economy; (2) the costs of market distribution; (3) regional specialization and market distribution; (4) public, quasi-public, and corporate control of market distribution; (5) the role of the consumer in market distribution (3 cred.; §B.A. 77; jr., sr., grad.; prereq. 7 or equiv.) VI MWF Vaile
- 186w. **International Economic Relations.** Survey of foreign economic interests of the United States, policies to promote world recovery, and study of the processes of dynamic development and adaptation of a nation's foreign trade to changing world markets. Requirements for freedom of selection of international economic policies and for their successful operation. Short laboratory problems required (3 cred.; jr., sr., grad.; prereq. 176) II MWF Upgren
189. **Principles of Public Finance.** Public expenditures, revenues, debts, fiscal policy, and financial administration. Special attention is given to tax principles, practices, and burdens (3 cred.; §B.A. 58, Econ. 191-192; jr., sr., grad.; prereq. 7 or equiv.) (Not offered in 1951-52)
190. **National Income Analysis.** A course consisting of: (a) a systematic presentation of a conceptual framework for the study of income flows, and (b) the theory of national income determination or, more generally, the theory of aggregate economic equilibrium (3 cred.; jr., sr., grad.; prereq. 7 or equiv., basic prep. in acct., 20 cred. in Econ. and/or B.A. courses or consent of instructor) (Not offered in 1951-52)
- 191f-192w.† **Public Finance.** Public expenditures, revenues, debts, fiscal policy, and financial administration. Special attention is given to tax principles, practices, and burdens (6 cred.; §B.A. 58, Econ. 189; jr., sr., grad.; prereq. 7 or equiv.) 9:30-11:00 TTh Heller
193. **State and Local Taxation.** Main problems of state and local finance and proposed solutions including coordination of national, state, and local fiscal policy and administration (3 cred.; jr., sr., grad.; prereq. 189 or 191-192 or B.A. 58) (Not offered in 1951-52)

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Credit is not given if the equivalent course listed after the § has been taken for credit.

- 195s. **Fiscal Policy.** An analysis of fiscal policy theory as developed by Keynes and his followers; the use of economic models in the formulation of fiscal policy; the potential role of taxes, expenditures and debt management in stabilizing the economy; and the administrative, legislative, and political barriers to the working out of a consistent national fiscal policy (3 cred.; sr. with consent of instructor, grad.; prereq. 20 cred. in soc. sci., including a course in public finance and Econ. 64 or 142, or equiv.) 11:00-12:30 TTh Heller
196. **Advanced International Economics.** Recent developments in international price theory, and in the application of employment and cycle theory in the international field. Topics include the analysis of the gains from trade, the foreign trade multiplier, balance of payments disequilibrium, and the theory of fluctuating exchange rates (3 cred.; jr. sr., grad.; prereq. 176) (Not offered in 1951-52)
- 197s. **Business Cycles and the Structure of Production.** This course is concerned with accepted interpretation of business cycle theory and its setting in the structure of production of the United States. Emphasis is placed upon the application of business cycle theory to specific problems in the maintenance of high productive employment and facilitating economic adjustments. Laboratory work, using the source materials so completely in general use by economists today when concerned with business cycle effects upon industries and upon the problem of maintaining high general levels of production in the economy as a whole to fulfill today's objective of "full employment." (3 cred.; jr., sr., grad.; prereq. 149) III MWF Upgren

For Graduate Students Only

- 200f-201w.† **Theory of Employment and Resources** (6 cred.) VIII-IX T Brownlee
 202s. **Methodology in Economics** (3 cred.) VIII-IX T Papandreou
 206s. **Seminar in Market Prices** (3 cred.) VIII-IX M Vaile
 213f. **General Equilibrium Theory** (3 cred.; prereq. 104 and 142) VIII-IX Th Brownlee
 214w. **Theory of Monopolistic Competition** (3 cred.; prereq. 213) VIII-IX Th Boddy
 215s. **Welfare Economics** (3 cred.; prereq. 213) VIII-IX W Brownlee
 233f-234w.† **Seminar in Public Finance** (6 cred.) VIII-IX M Heller
 243f-244w.† **Seminar in Money and Banking** (6 cred.) VIII-IX W Upgren
 251w-252s.† **Seminar in Industrial Relations** (6 cred.) VI-VII M Yoder
 299. **Graduate Research** (Cred. ar.)

EDUCATIONAL PSYCHOLOGY

Department chairman—C. Gilbert Wrenn

The following courses in Educational Psychology, offered by the College of Education, are regularly open to students in the College of Science, Literature, and the Arts:

- 60f. **Introduction to Measurement and Statistics.** This course includes a study of measures of central tendency, variability, and correlation as well as principles of test construction (3 cred.; jr., sr.; prereq. 6 cred. in psy.) IV TThS Van Wagener
 60s. **Introduction to Measurement and Statistics** (See 60f) II MWF Van Wagener
 120f,s. **Basic Principles of Measurement.** Principles of measurement applied to the construction and evaluation of tests and to the interpretation of scores. Illustrations from achievement, intelligence, interest, attitude, and personality tests. Each student will have an opportunity to construct an examination in the field of his major interest (3 cred.; jr., sr., grad.; prereq. 60 or equiv.) VII MWF Cook
 140w. **Instruments and Techniques of Measurement.** An intensive study of selected instruments for measuring intelligence, achievement, interests, attitudes, and personality traits with emphasis upon their use in educational guidance, personnel work, administration, and supervision. Laboratory practice two hours per week (3 cred.; sr., grad.; prereq. 120 or equiv.) VII-VIII TTh Cook
 142f,s. **Individual Mental Testing.** Application of basic principles of mental measurements to individual diagnosis. Demonstrations of several types of tests in consideration of other clinical procedures. Principles of mental test interpretation and reporting, and development of efficiency in the use of the Revised Stanford-Binet. Student should have time available for the practice administration of tests, one full day or two mornings per week being needed during testing period (3 cred.; sr., grad.; prereq. 120 or equiv.) VIII MWF and ar. Delp (f), III-IV S and ar. Delp (s)

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

144w. Individual Adult Testing. Demonstration and practice in the use of the Wechsler-Bellevue Adult Intelligence Scale. Use of Kent EGY and other tests applicable in personnel work. Recommended primarily for industrial personnel workers whose duties in test administration will be a minimum part of their professional position. Time must be available for the practice testing, one full day or two mornings per week being needed during testing period (3 cred.; sr., grad.; prereq. 120 or equiv.)
VIII MWF Delp

ENGLISH

For courses in writing, see page 67.

Department chairman—Theodore Hornberger; **associate chairman**—James T. Hillhouse

Major advisers in the College of Science, Literature, and the Arts—Associate Professors Clark and Jackson; Assistant Professors Atkins, Bowron, Buckley, del Plaine, Montgomery, Moore, and Unger.

Major sequence in the College of Science, Literature, and the Arts—A total of at least 31 credits in literature for the entire sequence, comprising the following:

A. Courses 75, Chaucer; 55-56, Shakespeare; 162, Milton.

B. Eighteen additional credits in Senior College courses, of which at least twelve must be from courses numbered 100 or above.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Prerequisites: (1) Courses 21-22 or 22-23. (2) Either (a) three units in one foreign language, or (b) two units in each of two foreign languages, a unit being either one year in high school or five credits in college.

All English majors shall write three papers of a minimum of 3000 words in Senior College literature courses chosen by themselves.

The department regards the knowledge of foreign languages, and especially of Latin, French, and German (in that order), 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. See page 11.

Major advisers in the College of Education—Professor Dora Smith and Assistant Professor Allen.

Requirements for a teacher's certificate—Major recommendation: Eng. 22-23 (10 cred.); Eng. 55-56 (6 cred.); Eng. 73-74 (6 cred.); Eng. 165 (3 cred.); Comp. 27-28 (6 cred.); 6 cred. in Speech; 3 additional cred. in courses numbered 100 or above.

Minor recommendation: Eng. 22-23 (10 cred.); Eng. 55-56 (6 cred.); Eng. 73-74 (6 cred.); Comp. 27-28 (6 cred.).

Students interested in taking English as a major or minor subject in the College of Education should see also the bulletin of that college for the requirements for the Language Arts Curriculum.

Education students who major in English are required to take Ed.C.I. 122, Literature for Adolescents.

Junior College Courses

A-B-C. Freshman English. A combined course in literature and composition. The composition is equivalent to that in Comp. 4-5-6 and meets the requirements for graduation. The literature read consists of novels, short stories, plays, and poetry—both English and American, and mostly modern—and is intended to interest not only the student who expects to major in English, but also the one who would enjoy, and profit from, the study of literature but who wants to major in some other subject. See English Composition, page 67.

21f-22w-23s.* Introduction to Literature. A chronological study of English literature with its historical background. An introduction to types of literature and literary ideas. 21f: The Renaissance and the rise of Puritanism. Marlowe, Spenser, Bacon, Browne, Milton, and Bunyan; 22w: The Restoration and the Eighteenth Century. Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding, and Sheridan; 23s: The Romantic Movement and the Victorians. Wordsworth, Byron, Shelley, Keats, Carlyle, Tennyson, Browning, and Arnold (15 cred.; prereq.**) III MTWThF Moore; VI MTWThF Buckley

22w-23s.* Introduction to Literature (2nd and 3rd qtrs. of 21-22-23. See 21f-22w-23s) IV MTWThF Montgomery

Classics 24s. Technical Terms of Science, Medicine, and the Humanities. (3 cred.; soph., jr., sr.; no prereq.) Lect. IV MW Ar.; rec. V F Swanson

Classics 31f,32w,§ Greek and Latin Drama in English (2 cred. per qtr.; soph., jr., sr.; no prereq.) IV MW McDonald

37f-38w-39s,§ Modern Literature. Intended for students in all departments and colleges, not particularly for English majors. Readings in twentieth-century British and American fiction, drama, and poetry. Selected, arranged, and discussed—not to give a full historical survey—but to enhance the student's pleasure in, and understanding of, imaginative literature generally. 37f: Short fiction; 38w: Poetry and drama; 39s: The novel since Thomas Hardy (9 cred.; soph., jr., sr.; prereq.**) VII MWF Montgomery (f), O'Connor (w,s)

Classics 42f. Greek Mythology. (2 cred.; soph., jr., sr.; no prereq.) V MW Ar.

Classics 43w. Ancient Mythology in Relation to Literature and Art. (2 cred.; soph., jr., sr.; no prereq.) V MW Ar.

45. American Life in American Literature. This course is intended for students in all colleges, and not particularly for those who mean to specialize in English (3 cred.; soph., jr., sr.; prereq.**) (Not offered in 1951-52)

Attention of students is called to Hum. 1-2-3, 11-12-13, and 21-22-23 (page 70).

Senior College Courses

Courses 52-53, 54, 55-56, 57, 66-67, 73-74, and 75 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

52f-53w,§ The English Novel. 52f: The reading of novels by Defoe, Fielding, Smollett, Jane Austen, Scott, and the Brontës; 53w: The reading of novels by Thackeray, Dickens, Trollope, George Eliot, Meredith, and Hardy (6 cred.; jr., sr.; prereq.**) VII MWF Moore

54. Morris, Pater, and Shaw. Emphasis on the estheticism of Pater and the social criticism of Morris and Shaw (3 cred.; jr., sr.; prereq.**) (Not offered in 1951-52)

55f-56w,§§ Shakespeare. 55f: The reading of selected comedies—*A Midsummer Night's Dream*, *The Merchant of Venice*, *Much Ado about Nothing*, *Twelfth Night*, *Measure for Measure*, *The Tempest*. These plays are to be read in all sections. Others may be read at the discretion of the instructor. 56w: The reading of selected histories and tragedies—*Richard II*, *Henry IV*, 1 and 2, *Henry V*, *Julius Caesar*, *Hamlet*, *Macbeth*. These plays are to be read in all sections. Others may be read at the discretion of the instructor (6 cred.; jr., sr.; prereq.**) Students may not take 55 and/or 56 and also 57) II MWF Atkins; IV MWF Armstrong; VI MWF Steinmann (f), Christie (w); VII MWF Buckley

55w-56s,§§ Shakespeare (See 55f-56w) III MWF Hessler; VI MWF Unger

55s. Shakespeare (1st qtr. of 55-56. See 55f-56w) II MWF Atkins; VI MWF Hornberger

56f,§§ Shakespeare (2nd qtr. of 55-56. See 55f-56w) II MWF Moore; VI MWF Marx

* Students may enter any quarter. Two quarters are required for English majors in the College of Science, Literature, and the Arts; the second and the third quarters, for English and Language Arts majors, and for English minors, in the College of Education; and the third quarter, for Language Arts minors in the latter college. Three quarters are recommended for all students.

§ Students may enter any quarter.

† Eng. A-B-C or Comp. 4-5-6 or Com. 1-2-3 or exemption from requirement.

** Comp. 4-5-6 or Com. 1-2-3, and 6 additional credits; or Eng. A-B-C; or 10 credits in 21-22-23.

§§ Students should not start with 56 except by permission of instructor.

64 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 57f.s. Shakespeare for Language Arts Minors in Education.** The reading of the plays commonly taught in high schools—*Julius Caesar*, *Hamlet*, *Macbeth*, *A Midsummer Night's Dream*, *The Merchant of Venice*, *As You Like It*, *The Tempest* (3 cred.; jr., sr.; prereq.**) Open only to students minoring in Language Arts in the College of Education, to those not majoring in Language Arts in that college, and to those not majoring or minoring in English in any college. Students may not take 57 and also 55 and/or 56) VII MWF Christie (f); VI MWF Helton (s)
- 66f-67w.§ The Literature of the Bible** (formerly 40-41, The Bible as Literature). Readings in the Old and New Testaments from the literary point of view. Old Testament: Selections from the historical narratives, the prophets, psalms, tales, wisdom literature. New Testament: Selections from the Gospels and Epistles (6 cred.; jr., sr.; prereq.**) III TThS Unger (f), Jackson (w)
- 73f-74w.§ American Literature.** Notable American authors from the seventeenth century to the present (6 cred.; jr., sr.; prereq.**) II MWF Turpie; VII MWF H. N. Smith
- 73w-74s.§ American Literature** (See 73f-74w) III MWF McDowell
- 75f. Chaucer.** The reading of selections from *The Canterbury Tales* with introduction dealing with the grammar and literary forms of fourteenth-century English (4 cred.; jr., sr.; prereq.**) III MTWTh Jackson
- 75w. Chaucer** (See 75f) III MWThF Atkins
- 75s. Chaucer** (See 75f) IV MTWTh Jackson
- 97f-98w-99s. Independent Reading Course.** Each student chooses his readings in conference with the instructor (9 cred.; jr., sr.; prereq. permission of instructor. Registration limited to 10 students) Ar. Ar. Hessler
- 100f.s. Old English** (Anglo-Saxon). An introduction to the sounds and grammar with some prose reading. The relation to Modern English is stressed (4 cred.; jr., sr., grad.; prereq.**) I MWThF Clark (f), II MTWF Armstrong (s)
- 102w. Readings in Old English Prose and Verse.** Critical reading of texts, and introduction to versification (3 cred.; jr., sr., grad.; prereq. 100) I MWF Armstrong
- 103s. Beowulf.** An introduction to the Old English poem, with reading of considerable portions of the text (3 cred.; jr., sr., grad.; prereq. 100) I MWF Armstrong
- 104f. Emerson and Thoreau** (3 cred.; jr., sr., grad.; prereq.**) III MWF Turpie
- 105w. Hawthorne and Melville** (3 cred.; jr., sr., grad.; prereq.**) III MWF Marx
- 106s. Whitman and Mark Twain** (3 cred.; jr., sr., grad.; prereq.**) III MWF Marx
- 109f-110w.§ Romantic Poets of the Early Nineteenth Century.** 109f: Wordsworth, Coleridge, Scott, etc.; 110w: Byron, Shelley, Keats, etc. (6 cred.; jr., sr., grad.; prereq.**) IV TThS Jackson
- 113s. American Short Story.** A historical examination of the American short story from the eighteenth century to the present (3 cred.; jr., sr., grad.; prereq.**) IV MWF Turpie
- 114f. The Midwest in Literature** (3 cred.; jr., sr., grad.; prereq.**) II MWF Buckley
- 115. The Development of English Prose Style.** Definition of six broad types of prose style on historical principles (3 cred.; jr., sr., grad.; prereq.**) (Not offered in 1951-52)
- 116. The Development of English Prose Style.** Studies in the styles of selected writers since 1700 (3 cred.; jr., sr., grad.; prereq.**) (Not offered in 1951-52)
- 117. American Essay** (3 cred.; jr., sr., grad.; prereq.**) (Not offered in 1951-52)
- 118-119. Nineteenth-Century Prose.** 118: The literature of social criticism: Carlyle, Ruskin, Arnold, and others; 119: Literature concerned largely with science and religion: Newman, Huxley, Spencer, Butler, and others (6 cred.; jr., sr., grad.; prereq.**) (Not offered in 1951-52)
- 120f-121w. The Interpretation of Poetry.** A study of certain technical aspects of poetry in relation to poetic meaning. 120f: Analysis of a number of short poems; 121w: Emphasis on Coleridge, Housman, Frost, and Eliot. See also Composition 104f-105w-106s for the writing of poetry (6 cred.; jr., sr., grad.; prereq.**) VII MWF Ar.
- 123f-124w-125s.§ The Technique of the Novel.** Special studies in novels of the late nineteenth and twentieth centuries, with particular regard to structure. See also Composition 101-102-103 for the writing of fiction (9 cred.; sr., grad.; prereq.** and permission of instructor) IX,X T Gray

§ Students may enter any quarter.

** Comp. 4-5-6 or Com. 1-2-3, and 6 additional credits; or Eng. A-B-C; or 10 credits in 21-22-23.

** Six credits in literature in this department, exclusive of Classics and A-B-C.

- 126f-127w.§ Drama, 1660-1870.** The history of English drama from the opening of the theaters in 1660. 126f: The Restoration and early eighteenth century. The heroic play, tragedy, comedy of manners, beginnings of sentimental comedy; 127w: The development of sentimentalism in the eighteenth century. The reaction: Goldsmith and Sheridan. Early nineteenth-century drama (6 cred.; jr., sr., grad.; prereq. §§) IV MWF Hillhouse
- 129s. Modern Drama, 1880 to the Present.** A survey of the chief dramatists, English, American, and Continental, from the time of Ibsen (3 cred.; jr., sr., grad.; prereq. 55-56 or 126-127) IV MWF Hillhouse
- 130w-131s.§ English Poetry, 1832 to 1901.** 130w: The Early and Mid-Victorians: Tennyson, the Brownings, Clough, Fitzgerald, Arnold, and others; 131s: The Pre-Raphaelites and after: The Rossettis, Swinburne, Morris, Wilde, and the poets of the 1890's (6 cred.; jr., sr., grad.; prereq. §§) III MWF Montgomery
- 133. Ballads** (3 cred.; jr., sr., grad.; prereq. §§) (*Not offered in 1951-52*)
- 134s. The Origins of American Naturalism** (3 cred.; jr., sr., grad.; prereq. §§) VI MWF Bowron
- 135s. Spenser.** Selections from the minor poems; *The Faerie Queene*; attention to classical and foreign influence on Spenser and his influence on later English poets (3 cred.; jr., sr., grad.; prereq. §§) III MWF Brown
- 136s. Advanced Shakespeare.** The work of the poet's maturity. Special attention to *Othello*, *King Lear*, *Antony and Cleopatra*, *Cymbeline*, *The Winter's Tale* (4 cred.; jr., sr., grad.; prereq. 55-56) IV MTWF Brown
- 137f-138w-139s.§ The Nineteenth Century in English Literature.** Napoleonic wars, Industrial Revolution, Darwinism, imperialism and democracy, estheticism; prose of social criticism from Hazlitt to Morris; problem of the poet's responsibility from Shelley to Yeats (9 cred.; jr., sr., grad.; prereq. §§) II TThS Erdman
- 142f-143w.§ Twentieth-Century Literature.** Survey of British and American literature from 1890 to 1950, studied for theme and technique and as part of literary and intellectual history. The emphasis in 142f will be on British authors; in 143w, on American authors (6 cred.; jr., sr., grad.; prereq. §§) I MWF O'Connor
- 147f-148w-149s. The Literature of England in the Middle Ages Exclusive of Chaucer.** Reading includes Anglo-French and Latin documents in translation; special attention to the period from the Norman Conquest to 1500 (9 cred.; jr., sr., grad.; prereq. 75 and 100 or concurrent registration in 100) VII MWF Clark
- 151s. Recent Poetry.** The development of twentieth-century poetry in England and America. Yeats, Hardy, Housman, Robinson. Movements in the second decade—Georgians, Imagists, etc. Lawrence, Sandburg, Frost, Eliot, Jeffers, younger poets (4 cred.; jr., sr., grad.; prereq. §§) VII MTWTF Jackson
- 152f. Medieval and Early Elizabethan Drama.** Selected mystery and morality plays and farces; *Ralph Roister Doister*, *Gammer Gurton's Nidie*; Kyd, Marlowe, Llyly, Greene, Peele (3 cred.; jr., sr., grad.; prereq. 55-56) IV MWF Brown
- 154f-155w.§ American Novel.** The history of the American novel from the beginning to the present (6 cred.; jr., sr., grad.; prereq. §§) III TThS Bowron
- 156. American Drama.** (3 cred.; jr., sr., grad.; prereq. §§) (*Not offered. Offered in 1952-53*)
- 159-160.§ Colonial Literature in America** (6 cred.; jr., sr., grad.; prereq. §§) (*Not offered. Offered in 1952-53*)
- 161. Scientific Thought in American Literature** (3 cred.; jr., sr., grad.; prereq. §§) (*Not offered in 1951-52*)
- 162f. Milton.** The minor poems, *Areopagitica*, *Paradise Lost*, and *Samson Agonistes* (3 cred.; jr., sr., grad.; prereq. 21-22 or 55-56) III MWF Hessler
- 162w. Milton** (See 162f) IV MWF Unger
- 162s. Milton** (See 162f) II MWF Unger
- 163-164. Restoration Drama** (6 cred.; jr., sr., grad.; prereq. §§) (*Not offered*)
- 165f,w. Introduction to Modern English** (formerly The Historical Study of Modern English). A scientific approach to the sounds and grammar of present-day English, with some attention to syntax; implications for a reasonable attitude toward English usage in America (3 cred.; jr., sr., grad.; prereq. §§) VI MWF Allen
- 166s. Historical Backgrounds of Modern English.** A study of those distinctive aspects of the sounds and grammar of Early Modern, Middle, and Old English which are significant for the language of the present day (3 cred.; jr., sr., grad.; prereq. 165) VI MWF Allen
- 169. Browning and Tennyson** (3 cred.; jr., sr., grad.; prereq. §§) (*Not offered in 1951-52*)

§ Students may enter either quarter.

§§ Six credits in literature in this department, exclusive of Classics and A-B-C.

66 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 170w. **Shakespeare's Later Contemporaries.** Selected plays of Chapman, Jonson, Dekker, Marston, Webster, Heywood, Beaumont and Fletcher, Middleton, Ford, and Shirley (3 cred.; jr., sr., grad.; prereq. 55-56) IV MWF Brown
- 174s. **American English.** The development of a distinctive vocabulary and pronunciation of American English; differences between it and British English; dialects in the United States (3 cred.; jr., sr., grad.; prereq. 6 cred in English literature, including language, above A-B-C) VII MWF Allen
- 175f-176w. § **The History of English Verse.** Origin and development of standard forms—ballad stanza, heroic couplet, blank verse, sonnet, etc. Discussion of metrical technique (6 cred.; jr., sr., grad.; prereq. §§) IV MWF Jackson
- 179-180. **Social and Intellectual Backgrounds of American Literature** (6 cred.; jr., sr., grad.; prereq. §§) (Not offered in 1951-52)
- 181s. **Recent Trends in Literary Criticism.** Criticism and scholarship; structure and form; science and literature; imagination and myth; isolation of the artist; political emphasis; experiments with language (3 cred.; jr., sr., grad.; prereq. §§) I MWF O'Connor
- 182w. **The Far West in Literature.** Expansion beyond the Mississippi as a force in American thought and letters: the literature of exploration and travel; the Pacific Coast regional movement; Mark Twain (3 cred.; jr., sr., grad.; prereq. §§) II MWF H. N. Smith
- 183f. **The Poetry of T. S. Eliot** (3 cred.; jr., sr., grad.; prereq. §§) II MWF Unger
- 184f-185w-186s. **The Interpretation of Drama.** Critical analysis of plays: Modern, Renaissance, and ancient (9 cred.; jr., sr., grad.; prereq. §§; 55-56 recommended) IX-X W Reisman (f), Coxe (w,s)
- 187f-188w-189s. § **Eighteenth-Century Literature.** Survey of English literature from 1700 to 1790. Parallel readings and critical essays. Graduate students will submit a term paper each quarter (9 cred.; jr., sr., grad.; prereq. §§) II MWF Monk
- 191f. **Imagery and Symbolism in English and American Literature.** A study of manifold literary influences, from the seventeenth century onward, upon T. S. Eliot and other twentieth-century writers (3 cred.; jr., sr., grad.; prereq. §§) IV MWF Atkins
193. **The Poetry of W. B. Yeats** (3 cred.; jr., sr., grad.; prereq. §§) (Not offered. Offered in 1952-53)
- 197f-198w-199s. § **Seventeenth-Century Literature.** 197f-198w: A survey of the prose and nondramatic poetry of the century down to 1660, with some consideration of the metaphysical and cavalier poets; 199s: Dryden and his contemporaries (9 cred.; jr., sr., grad.; prereq. §§) III MWF Unger (f,w), Monk (s)

Attention is called to the following courses, in which foreign languages or literatures are studied but for which no specific foreign language courses are prerequisites: Classics 106-107, 108, 191-192-193; German 73-74-75; Humanities 51-52-53, 61-62-63, 71-72-73; Italian 164; Portuguese 70-71; Scandinavian 161, 162, 171, 172, 173. Students are urged to examine the course offerings of the foreign language departments for other courses which are pertinent to English studies.

For Graduate Students Only

- 200w-201s. **Advanced Chaucer.** The more important poems apart from *The Canterbury Tales*. The treatment will be primarily literary and historical, linguistic proficiency being presumed (6 cred.; sr. with consent of department, grad.; prereq. 75 or equiv.) VI MWF Clark
- 202f-203w. § **Elizabethan Nondramatic Literature.** 202f: Tudor prose: "courtesy books" (Eliot, Ascham), voyages (Drake, Raleigh), criticism (Gascoigne, Sidney, and others), fiction (Lylly, Sidney, Nashe), history (More, Fox, Holinshed, and others), tracts and essays (Nashe, Bacon, and others); 203w: Tudor lyric and narrative poetry (6 cred.; sr. with consent of department, grad.) VI MWF Brown
- 204f-205w-206s. **The Rise and Development of Standard English.** An inductive study of the development of the English vocabulary and lexicography (204), historical phonology (205), and historical morphology and syntax (206), with attention to the history of attitudes toward usage (9 cred.; sr. with consent of department, grad.; prereq. 100 or equiv., but 100 may be taken concurrently with 204; students may enter 205, but not 206) VII-VIII T and VII Th Allen
- 225f-226w-227s. **Elizabethan Drama** (9 cred.; prereq. 136 or 152 or 170 or equiv.) IX-X T Brown

§ Students may enter any quarter.

\$\$ Six credits in literature in this department, exclusive of Classics and A-B-C.

- 240f-241w-242s. The Canterbury Tales** (9 cred.) IX-X Th Clark
- 246f-247w.** § **English Literary Criticism.** A study of the basic historical texts, also an examination of those principles and issues which have special relevance for modern criticism (6 cred.; sr. with consent of instructor, grad.) IV MWF O'Connor
- 253f-254w-255s. American Romanticism I: New England.** Hawthorne, Emerson, Thoreau, and their contemporaries (9 cred.; prereq. consent of instructor) IX-X W McDowell
- 262f-263w-264s. Nineteenth-Century Novel II.** Thackeray and the Brontës, George Eliot and Trollope, Hardy and Meredith (9 cred.) IX-X Th Hillhouse
- 277f-278w-279s. American Realism** (9 cred.; prereq. consent of instructor) VIII-IX F H. N. Smith (f,s), Hornberger (w)
- 284f-285w-286s. Dryden and His Age** (9 cred.) IX-X T Monk
- 287f-288w-289s. Studies in Victorian Literature** (9 cred.) IX-X W Erdman
- 297f-298w-299s. Independent Reading** (9 cred.; prereq. M.A. degree or equiv.) Ar. Ar. Graduate staff

ENGLISH COMPOSITION

Major and minor sequences—There is no major sequence in composition. The minor sequence is subject only to the usual college rules (see page 14); and a major in English with a minor in composition is permissible.

Concurrent registration in composition courses—Students may not register for more than one composition course at a time.

Important note—No student may register for any freshman course in composition or communication without presenting an "English Classification Card (Part II)" as evidence of his assignment. On the basis of (a) the student's rank in his high-school graduating class, (b) his score in the American Council on Education Examination, (c) his score on the Co-operative English Test, and (d) his grade on an impromptu theme on an assigned subject, the student is assigned to one of four categories. If he is assigned to Category (1), he is not required to take any courses in composition or communication—though he may, if he wishes to, take English A-B-C, Composition 4-5-6, or Communication 1-2-3. If assigned to Category (2), he must take English A-B-C, Composition 4-5-6, or Communication 1-2-3. If assigned to Category (3), he must take Composition 4-5-6 or Communication 1-2-3. If assigned to Category (4), he must take Preparatory English; and he must, after passing it, take Composition 4-5-6 or Communication 1-2-3.

English A-B-C is a 15-credit course consisting of 9 credits of literature and 6 of composition; Composition 4-5-6, a 9-credit course in composition; and Communication 1-2-3 (offered in the Department of General Studies [see page 70]), a 12-credit course in composition and speech. The student may satisfy the requirement in English for graduation, or for admission to the Senior College, by passing any of these courses or by being assigned to Category (1). Preparatory English offered in the General Extension Division (see the bulletin of that division) is a no-credit course in composition.

Any student who has already completed one or more quarters of composition in another college or university should consult Mr. Steinmann, in 222 Folwell Hall, before registering.

Any student who receives a grade of A in the composition part of English A or B or in Composition 4 or 5 may, upon recommendation of his instructor, be exempted from any further requirement in English. Any student who receives a grade of A or B in Composition 4 or 5 may, upon recommendation of his instructor, elect the following quarter of English A-B-C.

§ Students may enter either quarter.

Junior College Courses

Af-Bw-Cs. Freshman English. A combined course in literature and composition. The composition is equivalent to that in Comp. 4-5-6 and meets the requirement for graduation. The literature read consists of novels, short stories, plays, and poetry—both English and American, and mostly modern—and is intended to interest the student who would enjoy, and profit from, the study of literature but who wants to major in some other subject (15 cred.; prereq. assignment to Category [1] or [2] [see "Important note," page 67]. A-B-C corresponds to G.E.D. Tests No. 1 and 4 [see page 22]) I MTWThF; II MTWThF; III MTWThF; IV MTWThF; V MTWThF; VI MTWThF; VII MTWThF; VIII MTWThF

Aw-Bs. Freshman English (1st two qtrs. of A-B-C. See Af-Bw-Cs) I MTWThF

As. Freshman English (1st qtr. of A-B-C. See Af-Bw-Cs) II MTWThF

Bf-Cw. Freshman English (2nd and 3rd qtrs. of A-B-C. See Af-Bw-Cs) II MTWThF

Cf. Freshman English (3rd qtr. of A-B-C. See Af-Bw-Cs) VI MTWThF

4f-5w-6s. Freshman Composition. Practical training in reading and writing (9 cred.; prereq. assignment to Category [1], [2], or [3] [see "Important note," page 67]), corresponds to G.E.D. Test No. 1 [see page 22]) I MWF; II MWF; III MWF; IV MWF; V MWF; VI MWF

4w-5s. Freshman Composition (1st two qtrs. of 4-5-6. See 4f-5w-6s) IV TThS; V MWF; VIII MWF

4s. Freshman Composition (1st qtr. of 4-5-6. See 4f-5w-6s) IV TThS; V MWF; VIII MWF

5f-6w. Freshman Composition (2nd and 3rd qtrs. of 4-5-6. See 4f-5w-6s) I MWF

6f. Freshman Composition (3rd qtr. of 4-5-6. See 4f-5w-6s) VII MWF; VIII MWF

Attention is called to Communication 1-2-3 (page 70).

7f. Composition Review. A refresher course, including the reading of current magazines and the writing of themes; designed to review basic principles of analysis and organization necessary to the writing of clear and logical exposition. Not to be confused with Comp. 27 (3 cred.; prereq. Comp. 4-5-6 or Com. 1-2-3; students who have taken Eng. A-B-C admitted only by permission of instructor) IV MWF

27f-28w.* Advanced Writing. 27f: A course in formal exposition, stressing adequate content, logical development, and organization of material. (Not to be confused with Comp. 7.) 28w: A course in the writing of description and narration, stressing methods and technique, particularly in simple narratives of general or technical interest: biography, travel, expanded incident, process, sketch (6 cred.; prereq. Eng. A-B-C or Comp. 4-5-6 or Com. 1-2-3 or exemption from requirement) I MWF; III MWF; IV MWF; V MWF; VI MWF; VII MWF; II TThS

27w-28s.* Advanced Writing (See 27f-28w) II MWF; III MWF; IV MWF

27f.* Advanced Writing (1st qtr. of 27-28. See 27f-28w) II MWF (legal sec.); V MWF (med. sec.) Ar.

27w.* Advanced Writing (1st qtr. of 27-28. See 27f-28w) I MWF; II MWF; IV MWF (legal sec.); V MWF (med. sec.)

27s.* Advanced Writing (1st qtr. of 27-28. See 27f-28w) I MWF; II MWF; III MWF (legal sec.); IV MWF

28f.* Advanced Writing (2nd qtr. of 27-28. See 27f-28w) II MWF; III MWF

29s.* Advanced Writing. A continuation of 27 and 28, for students who wish further opportunity to write. Readings from current writers with special attention to technique (3 cred.; prereq. 27) II MWF Ar.

Senior College Courses

Course 65 is open to Junior College students who have an average grade of at least B in the prerequisite courses.

Courses 67-68 and 81 are open to Junior College students who have an average of at least B in two quarters of Courses 27, 28, 29, 65.

Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

* For prelegal students, 27 is required. For Journalism majors and for English and Language Arts majors and minors in the College of Education, both 27 and 28 are required. They may be taken in either order, but it is preferable to take 27 first. Students not required to take 28 may take 29 instead; and all students are at liberty to take all three quarters. Students not required to take 28 should take it if they wish a first course in description and narration: they should take 29 if they wish either a second course in description and narration (following 28) or further training in exposition.

- 58f. Business Reports and Letters.** Style, forms, and methods in business writing (3 cred.; jr., sr.; prereq. Eng. A-B-C or Comp. 4-5-6 or Com. 1-2-3 or exemption from requirement. Open to students in Business Administration and, with consent of instructor, to others) II MWF; III MWF; IV MWF Guthrie and others
- 58w. Business Reports and Letters** (See 58f) II MWF; IV MWF Guthrie and others
- 58s. Business Reports and Letters** (See 58f) II MWF Ar.
- 65w. The Writing of Research Papers and Articles** (3 cred.; jr., sr.; prereq. Eng. A-B-C or Comp. 4-5-6 or Com. 1-2-3 and 6 additional cred. in Eng. or comp., or 10 cred. in Eng. 21-22-23, and average of B in prerequisite courses) III T and ar. Buckley
- 67f-68w. Problems of Style.** Studies in James Joyce, Thomas Mann, Willa Cather, and Marcel Proust (6 cred.; jr., sr.; prereq. average of B in two quarters of 27, 28, 29, 65) VI MWF Atkins
- 81. Essays and Articles** (3 cred.; jr., sr.; prereq. average of B in two qtrs. of 27, 28, 29, 65) (Not offered in 1951-52)
- 101f-102w-103s.8 The Writing of Fiction.** A study of the principles of the composition of fiction. Class meetings are devoted to the analysis of examples drawn from standard sources. Writing by students is criticized in individual conferences (9 cred.; jr., sr., grad., others with consent of instructor; prereq. for undergraduates 6 cred. above 50 in composition or literature or consent of instructor) VIII-IX M Blum; VIII-IX W Ross
- 104s-105-106.8 The Writing of Poetry** (9 cred.; jr., sr., grad., others with consent of instructor; prereq. for undergraduates 6 cred. above 50 in comp. or Eng. 120-121 or consent of instructor) VIII-IX Th Unger

For Graduate Students Only

- 200f-201w-202s. Graduate Seminar in Writing** (9 cred.; open to graduates and to special students not candidates for degrees on consent of instructor; credits may be counted as part of the distribution requirement in Plan B for the M.A. or as the minor in Plan A) IX-X M Ar. (f,w), Coxe (s)

FAMILY LIFE

See General Studies, page 70.

FINE ARTS

See Art, page 30.

FRENCH

See Romance Languages, page 136.

GENERAL STUDIES

Department chairman—Russell M. Cooper

The Department of General Studies includes interdepartmental or divisional courses devised especially for the purposes of general education. They are designed to supplement the courses of other departments in helping the student to achieve a well-rounded education, and they are adapted to the needs of students expecting to specialize elsewhere as well as to those in the College of Science, Literature, and the Arts.

The courses have been arranged in six groups, each dealing with a different phase of the student's general educational development. In registering for these courses, write the group heading in the column labeled "department," as indicated in the listings below.

\$ Attention is called to an arrangement combining work in composition and work in literature. A student who has completed a year's work in The Writing of Fiction may get (with the consent of the instructor, Mr. Gray) a second year's training in the writing of fiction by registering for Eng. 123-124-125, The Technique of the Novel. Similarly, a student who has completed a year's work in The Writing of Poetry may get (with the consent of the instructor, Mr. Warren) additional training in the writing of poetry by registering for Eng. 120-121, Interpretation of Poetry.

70 COURSE OFFERINGS AND MAJOR REQUIREMENTS

COMMUNICATION

Com.1f-2w-3s. Communication. A course to help students use the English language more effectively, with constant practice in speaking and writing, in listening and reading. Com. 1—how words convey meaning and social attitudes toward various language practices; Com. 2—logical and psychological means of persuasion; Com. 3—the mass communication mediums of press, radio, and film, with special attention to the causes of blocked, distorted, and inadequate communicating. Nine regular conferences with the instructor, use of speech equipment, and special conferences with the speech or writing consultants. The course is accepted as equivalent to Comp. 4-5-6 in satisfying any requirements of the University (12 cred.; prereq. assignment to Category 1, 2, or 3 [see "Important note," page 67] Corresponds to G.E.D. Test No. 1 [See page 22]) I MTWF; II MTWF; III MTWF; IV MTWF; V MTWF; VI MTWF; VII MTWF; VIII MTWF

Com.1w-2s. Communication (Two qtrs. of 1-2-3. See 1f-2w-3s) I MTWF; V MTWF; VII MTWF

Com.1s. Communication (First qtr. of 1-2-3. See 1f-2w-3s) II MTWF; V MTWF

Com.2f-3w. Communication (Second and third qtrs. of 1-2-3. See 1f-2w-3s) V MTWF

Com.3f. Communication (Third qtr. of 1-2-3. See 1f-2w-3s) V MTWF

FAMILY LIFE

With recognition that preparation for marriage and family living is an important part of general education, five courses are provided below. While it is assumed that the student will elect only those courses most appropriate to his personal needs, a maximum of 15 credits in the field may be applied toward the B.A. degree.

F.L.1f,w,s. Preparation for Marriage. A discussion of such topics as the function of the family today, problems of dating and courtship, the engagement, relations of husband and wife, family crises and bases of marital stability (3 cred.; no prereq.) II MWF; V MWF; VII MWF; II TThS Dyer, Hansen, Levine, Neubeck, and others

F.L.14s. Nutrition and Food Management. Scientific principles of nutrition; food purchasing; food preparation and service. The class is limited to 24 students, and will afford practical laboratory experience (5 cred.; no prereq.; not open to students who have completed H.E. 30) IX MTWThF and X TTh Ar.

F.L.15f,w,s. The Home and Its Furnishing. 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 (3 cred.; no prereq.) IV MWF (f,s), VIII MWF (w) Ludwig

F.L.20f,w,s. Consumer Education. Aid to wise buying; effective consumer demand upon the market; consumer credit and banking procedures; insurance and annuities from the buyer's viewpoint; distribution and stability of income; governmental efforts to protect consumers (3 cred.; no prereq.) II MWF Price

F.L.25f,w,s.* Child Development and Adjustment. The child as a growing person in the home and in society; development of habits, skills, attitudes and adjustment; the development of self-direction; the provision of good environment for child growth (For the general student; not for those interested in professional work with children. Majors in the Program of Kindergarten-Nursing as well as majors in Psychology may not register for this course) (3 cred.; no prereq.) III MWF Brieland

HUMANITIES

The humanities are concerned with the inner life of man—his values, his appreciations, his goals. While a distinctive field of study, they are related to the social sciences which deal with relations between men, and the natural sciences which deal with the world outside of man. The first three courses listed below emphasize great human issues as depicted by fictional, dramatic, philosophical, and artistic materials, while the Arts sequence is concerned more explicitly with the development of esthetic appreciation.

* Students may not receive credit for this course if they have had Child Welfare 40 or Child Welfare 80.

Junior College Courses

- Hum.1f. Humanities in the Modern World I.** The old regime, the revolution and Napoleon. Period: from about 1740 to about 1820. Authors: Voltaire, Rousseau, Burke, Paine, Goethe, and the poets. One historical novel, Tolstoy's *War and Peace* (5 cred.; no prereq.) I MTWThF Kwiat; I MTWThF Taylor; II MTWThF Coxe; II MTWThF D. K. Smith; III MTWThF Blum; III MTWThF Ar.; IV MTWThF Ross; IV MTWThF Monk; IV MTWThF Ames; V MTWThF Ar.; VI MTWThF Bryan; VII MTWThF Ar.
- Hum.1w. Humanities in the Modern World I** (See Hum. 1f) I MTWThF Swanson; II MTWThF Livingston; VI MTWThF Ames
- Hum.1s. Humanities in the Modern World I** (See Hum. 1f) III MTWThF Ramsland; VI MTWThF Ar.
- Hum.2f. Humanities in the Modern World II.** The industrial revolution; liberalism and socialism. How these bulked large in the nineteenth century. Period: from about 1776 to 1850. Authors: Carlyle, Mill, Marx, Smith, Malthus, Ibsen, Zola, Dostoyevsky, and the poets (5 cred.; prereq. 1) III MTWThF Ramsland
- Hum.2w. Humanities in the Modern World II** (See Hum. 2f) I MTWThF Kwiat; I MTWThF Taylor; II MTWThF Coxe; II MTWThF D. K. Smith; III MTWThF Blum; III MTWThF Ar.; IV MTWThF Ross; IV MTWThF Gray; IV MTWThF Ames; V MTWThF Ar.; VI MTWThF Bryan; VII MTWThF Ar.
- Hum.2s. Humanities in the Modern World II** (See Hum. 2f) I MTWThF Swanson; II MTWThF Livingston; VI MTWThF Ar.
- Hum.3f. Humanities in the Modern World III.** The impact of evolution; religion and morals in a changing world. Period: from about 1840 to about 1914. Authors: Huxley, Arnold, Turgeneff, Nietzsche, Shaw, Mann, and the poets (5 cred.; prereq. 2) II MTWThF Livingston
- Hum.3w. Humanities in the Modern World III.** (See Hum. 3f) III MTWThF Ramsland
- Hum.3s. Humanities in the Modern World III.** (See Hum. 3f) I MTWThF Kwiat; I MTWThF Taylor; II MTWThF Coxe; II MTWThF D. K. Smith; III MTWThF Blum; III MTWThF Ar.; IV MTWThF Ross; IV MTWThF Gray; IV MTWThF Ames; V MTWThF Ar.; VI MTWThF Bryan; VII MTWThF Ar.
- Hum.4f. Humanities in the Modern World IV.** An introduction to the study of the humanities since World War I. The authors studied include Freud, Lenin, Malraux, Koestler, T. S. Eliot, and others. The background topics include civilization between two wars, the impact of psychoanalysis, communism versus fascism, etc. (5 cred.; prereq. 1 or 2 or 3) I MTWThF Swanson
- Hum.4w. Humanities in the Modern World IV.** (See 4f) IV MTWThF Livingston
- Hum.4s. Humanities in the Modern World IV.** (See 4f) IV MTWThF Kwiat
- Hum.11f-12w-13s. The European Heritage: from Homer to Molière.** Great books as ideal representations of civilized man by himself, taken in association with notable works of fine art. Stress will be laid on ideals and forces of continuing importance for use in present-day civilization
- Hum.11f. The Greek Heritage.** The golden age of Athens—tragedy, the concepts of goodness and beauty, the struggle for the state; the age of reason—the concepts of reason, justice, order. Selected readings in the historians and Aristotle; longer readings in Homer, Plato, the dramatists. Greek architecture and sculpture (5 cred.; no prereq.) III MTWThF Livingston
- Hum.12w. Roman and Medieval Heritage.** Roman jurisprudence and organization; epicureanism and stoicism. Selections from Lucretius, Epictetus, Marcus Aurelius. Medieval faith, theocracy. Selections from St. Augustine, Dante, Chaucer. Ecclesiastical and feudal architecture (5 cred.; no prereq.) III MTWThF Livingston
- Hum.13s. The Renaissance Heritage.** Humanism; magnificence and individualism; secularism, skepticism, political realism; the protestant strain; modern science and scientific method. Selected readings in Machiavelli, More, Montaigne, Swift, Shakespeare, Milton, Molière. Renaissance architecture, sculpture and painting (5 cred.; no prereq.) III MTWThF Livingston
- Hum.21f. American Life I.** The growth of individualism and democracy (with particular attention to minorities) as recorded in American history, social thought, literature, and the arts (Formerly Hum. 22) (3 cred.; no prereq.) II MWF Kwiat; III MWF Davies; IV MWF Bowron and others; VII MWF Turpie
- Hum.22w. American Life II.** The place in American civilization of the land, the city, and the good life; their implications and interrelations (Formerly Hum. 23) (3 cred.; no prereq.) II MWF Kwiat; III MWF Davies; IV MWF Bowron and others; VII MWF Turpie

72 COURSE OFFERINGS AND MAJOR REQUIREMENTS

Hum.23s. American Life III. The growth and interrelation of nationalism, regionalism, and internationalism in American culture and thought (Formerly Hum. 21) (3 cred.; no prereq.) II MWF Kwiat; III MWF Davies; IV MWF Bowron and others; VII MWF Turpie

The Arts—The following three courses comprise a sequence for students seeking an elementary understanding of art, music, poetry, and esthetics. The student may elect one, two, or all three of the offerings and in any order except that either Art 1 or Music 10 must precede Philosophy 4.

Art 1f,w,s. Principles of Art (4 cred.; no prereq.) Lect. III MWF Torbert and faculty; Lab.: I-II M; III-IV M; I-II T; III-IV T; V-VI T; VII-VIII T; IX-X T; I-II W; III-IV W; I-II Th; III-IV Th; V-VI Th; VII-VIII Th; I-II F; III-IV F

Mu.10f,w,s. Introduction to Music (4 cred.; no prereq.) Lect. III MWF; lab. III TTh or ar.

Phil.4s. Introduction to Philosophy of Art (Formerly Phil. 59) (4 cred.; prereq. Art 1 or Music 10) III MTWThF Hospers

Senior College Courses

Senior College courses in this department are not open to Junior College students except by special permission of the Students' Work Committee.

Hum.51f-52w-53s.* Humanities in the Modern World. This course is similar to Humanities 1-2-3 except that it is confined to juniors and seniors. A student may not receive credit for any quarter of this course if he has completed the corresponding quarter of Hum. 1-2-3 (15 cred.; jr., sr.; no prereq.) III MTWThF Wood; V MTWThF Bowditch; VI MTWThF Wolf

Hum. 61f-62w-63s.* The European Heritage: from Homer to Molière. This course is similar to Hum. 11-12-13 except that it is confined to juniors and seniors. A student may not receive credit for any quarter of this course if he has completed the corresponding quarter of Hum. 11-12-13 (15 cred.; jr., sr.; no prereq.) II MTWThF Ames; III MTWThF Shaw

Hum.71f-72w-73s.* Humanities in the United States. An interdisciplinary study of three periods in American civilization, conducted on a more advanced level than Hum. 21-22-23. A student may not receive credit for any quarter of this course if he has completed the corresponding quarter of Hum. 21-22-23 (9 cred.; jr., sr.; no prereq.) VII MWF Marx

Hum.131f-132w-133s. Humanities Proseminar. Topic for course: The Place of the Humanities in an Age of Science (Formerly Hum. 97-98-99) (2 cred. per qtr.; sr., grad.) VII-VIII W Ross

For information concerning a major in the Humanities, see page 89.

NATURAL SCIENCE

Several general education courses in natural science are listed below, each serving a distinctive purpose. Nat.Sci. 1-2-3 is intended for students desiring an introduction to the total field of science, 4-5-6 is for those desiring an acquaintance with the physical universe, while 7-8-9 is for those wishing to explore the world of life.

Any of these Junior College courses may be applied toward the group "D" requirement in the natural sciences for admission to the Senior College of Science, Literature, and the Arts, the School of Business Administration, and the College of Education. Under Plan I, the course must be taken in its entirety. Students taking 1-2-3 may not receive credit for 4-5-6 or 7-8-9, but they may take both 4-5-6 and 7-8-9 for credit. Students who have taken the elementary course of any science department may not register for the corresponding portion of these Natural Science courses.

* Students may enter any quarter.

Junior College Courses

Nat.Sci.1f-2w†-3s. Orientation in the Natural Sciences. An integrated survey course in which the student is introduced to basic principles and subject matter of science and the meaning of the scientific method in physical and biological sciences. 1f: Astronomy and physics; 2w: Chemistry and geology; 3s: Man and the biological world; heredity, race evolution, physiology, ecology and health (15 cred.; fr., soph. Corresponds to G.E.D. Test No. 3. See page 22.) II MTWThF Graubard; one hr. lab. Ar.

Nat.Sci.4f-5w†-6s. The Physical World. Essential elements of astronomy, physics, chemistry, and geology, selected to illustrate the methods of science and to acquaint the student with the physical universe around him (10 cred.; fr., soph.; no prereq.) Lect. IV MWF; lab. VI-VII M; VIII-IX M; III-IV T; VI-VII W; III-IV Th; VI-VII Th; VI-VII F; I-II S (f,w) Buchta; VI-VII M; VI-VII W; I-II S (s) Thiel

Nat.Sci.7f-8w-9s.† General Biology. The main principles of plant and animal life with particular reference to man and his place in the biological world (10 cred.; fr., soph.; no prereq.) Lect. V WF Ar.; lab. sections as follows: I-II MF; IX-X MF; I-II TTh

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

Phil.81f-82w-83s.* Science and Civilization (Formerly Phil. 80-81-82) (9 cred.; designed primarily as a senior integrative course, but open to juniors on consent of instructor; no prereq.) IV MWF Brodbeck

Nat.Sci.171f-172w-173s. The Development of the Sciences. The aim of this course is to provide a first-hand acquaintance with the manner in which man evolved science, as we know it today, through a study of his past approaches, errors and achievements. Stress is laid on original works (in English translation) rather than summaries; on roles of culture, values, techniques, goals and social and emotional intrusions. 171f: Deals with science of antiquity and Middle Ages; 172w: Period from 1543 to 1800; 173s: Selected high spots in modern science of nineteenth and twentieth centuries (9 cred.; jr., sr., grad.; prereq. one year of biological and of physical science in high school or college or consent of instructor) IV MWF Graubard

PERSONAL ORIENTATION

The successful person cannot be content with a knowledge of only such fields as 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.

Per.Or.1f,w,s. How to Study. Practical assistance to the student in developing efficient methods of study and concentration, organizing material, preparing for examinations, and improving reading ability. Attention to the orientation of students in their attitudes and motivation, and the relation of these to satisfactory performance (2 cred.; no prereq.) I MWF Harrell; II MWF Harrell; VI MWF Renzaglia; VII MWF Renzaglia

Per.Or.11f,w,s. Choosing a Vocation. Assistance to students in understanding themselves as the best basis for vocational-educational planning. Consideration of occupational trends, descriptions, and adjustment problems. Active student participation through discussion and individual projects (2 cred.; fr., soph.; no prereq.) II TTh and 1 hr. ar. Hewer

SOCIAL SCIENCE

It is important that every student understand the crisis of our age. Course 1-2-3 provides a broad social orientation for Junior College students while the other courses help the student to integrate further his own social philosophy.

* Students may enter any quarter.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

Junior College Courses

- Soc.Sci.1f-2w-3s.** **Introduction to Social Science.** An integrated study of the factors—historical, political, economic, social, psychological and cultural—that influence man's behavior. The course is organized around three basic themes: (1) development of personality, (2) work as a central aspect of modern life, and (3) the quest for community. The course may be used to satisfy the social science requirement for admission to the Senior College of Science, Literature, and the Arts, the College of Education and the School of Business Administration. To satisfy Group C under Plan I, though not under Plan II, it must be taken in its entirety (12 cred.; no prereq.) A one-hour discussion group will be arranged for each of the following sections: I MWF Nelson; II MWF Nelson; II MWF Calhoun; III MWF Calhoun; III MWF Endleman; III MWF Ar.; IV MWF Nelson; IV MWF Ar.; V MWF Calhoun; VI MWF Endleman; III-IV TTh Naftalin
- Soc.Sci.1w-2s.** **Introduction to Social Science** (1st 2 qtrs. of 1-2-3. See 1f-2w-3s) A one-hour discussion group will be arranged for each of the following sections: II MWF Endleman; III MWF Ar.; II TThS Sibley
- Soc.Sci.1s.** **Introduction to Social Science** (1st qtr. of 1-2-3. See 1f-2w-3s) A one-hour discussion group will be arranged for each of the following sections: II MWF Potter; IV MWF Potter
- Soc.Sci.2f-3w.** **Introduction to Social Science** (2nd and 3rd qtrs. of 1-2-3. See 1f-2w-3s) A one-hour discussion group will be arranged for each of the following sections: II MWF Potter; IV MWF Potter
- Soc.Sci.3f.** **Introduction to Social Science** (3rd qtr. of 1-2-3. See 1f-2w-3s) A one-hour discussion group will be arranged for each of the following sections: II MWF Endleman; II TThS Sibley
- Soc.Sci.11f-12w-13s.* International Relations.** A survey of the world's critical areas and an examination of international forces in war and peace. This course offers a basis for informed evaluation of future as well as present international situations (9 cred.; fr., soph.; no prereq.) III MWF Turner, Cooper

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

Soc.Sci.81f-82w-83s.* Public Affairs Forum. Introduction to contemporary American and world problems. Lectures, study and forum discussion concerning selected issues (9 cred.; jr., sr.; no prereq.) IV MWF and V F Ziebarth

GEOGRAPHY

Department chairman—Jan O. M. Broek

Major advisers in the College of Science, Literature, and the Arts—Professor Weaver, Assistant Professor Borchert.

Major sequence in the College of Science, Literature, and the Arts—Thirty credits, of which at least 20 credits should be in Senior College courses in Geography, the remainder to be chosen from the following: Ag.Econ. 104, 110, 170, 172; Anth. 113, 119; Arch. 104; Art. 133; Econ. 126, 179; For. 56, 136; Geol. 118, 119a-b, 120, 145; Hist. 82, 112-113-114, 146-147-148; Pol.Sci. 85; Soc. 111, 140.

The program normally should include Geog. 112, 13, 133, 138, 160 and 170. Prerequisites: Required: Geog. 1, 4, 41, 70. Elect. 1-2 and A; Econ. 6-7. Recommended: Econ. 5 or Soc. 45; Soils 4. Modification of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education—Assistant Professor Borchert.

* Students may enter any quarter.

Requirements for a teacher's certificate—Major recommendation: a minimum of 28 credits in Geography, including 1, 4 or 41, 112, 113, and 143, and five additional credits from Geol. 1-2 or 8.

Minor recommendation: a minimum of 18 credits in Geography, including 1, and 4 or 41.

For a specialized curriculum in social studies, see the *Bulletin of the College of Education*.

Junior College Courses

- 1f,w,s. **Geography of Physical Resources.** The character, causes, and significance of regional differences in the world's physical resources (5 cred.; no prereq. Not open to students who have taken the old Course 11) Lect. II MWF Borchert; lab. sections as follows: I MW; I TTh; III WF; V TTh; VI TTh; VIII WF
- 4f,w,s. **Human Geography.** The geography of population and principal ways of life; the capacity of the earth for future population (5 cred.; no prereq. Not open to students who have taken the old Course 45) Lect. III MWF Brook (f,s), Sopher (w); lab. sections as follows: II MW; III TTh; IV MW; IV TTh; V MW; VII TTh
- 41f,w,s. **Geography of Commercial Production.** An introductory course in economic geography with special emphasis on commodities of commercial significance. Particular attention is given to the world patterns of raw material occurrence and production, as well as to the associated centers of industrial fabrication (5 cred.; no prereq.) Lect. IV MWThF Weaver; lab. sections as follows: I F; II F; III M; V F; VI M; VIII M
- 47s. **Geography of Minnesota.** A geographical consideration of the state with particular attention to the physical setting, population, agriculture, forestry, mining, industry, recreation, and transportation (3 cred.; prereq. 5 cred. in geog. or consent of instructor) I MWF Kress

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 60f. **Major Relief Patterns of the Continents.** Major regional differences in relief of the earth's land surface. Emphasis on map study, distribution patterns, surface characteristics of regions and regional boundaries (2 cred.; jr., sr.; prereq. 1) VI MW Sopher
- 70f. **Introduction to Cartography.** The principles of map projections, their construction and properties. Types of maps. Problems and practice in the construction of specialty maps (3 cred.; soph. with C average, jr., sr.; prereq. 10 cred. in geog. Not open to students who have taken the old Course 111) VI-VII TTh Sopher
- 90f,w,s. **Readings.** (Cre'. ar.; jr., sr.; prereq. 12 cred. in geog. and consent of instructor) Ar. Ar. Staff
- 101s. **Western and Central Europe.** An introduction to the major physical and cultural regions of Europe as a whole, followed by a more intensive discussion of the population patterns, resources, and industries in the individual countries of western and central Europe (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor) VIII MWF Ar.
105. **Mediterranean Region.** A regional survey of the lands adjacent to the Mediterranean Sea in southern Europe, western Asia and northern Africa (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor) (Not offered in 1951-52)
- 106w. **Scandinavia.** The physical and human geography of Denmark, Finland, Iceland, Norway, and Sweden and adjacent waters considered both by individual countries and as a region (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor) I MWF Kress
- 107w. **Soviet Union.** The character of and bases for the regional diversity of physical resources, population, agriculture, manufacturing, and transportation in the U.S.S.R. (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor) VI MWF Borchert
109. **Middle America.** Physical and human geography of the West Indies and of the mainland from Mexico to Panama (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor) Not offered in 1951-52

76 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 110s. **South America.** A regional survey of the physical resources, population, agriculture, manufacturing, and transportation in the countries of South America (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor) VI MWF Borchert
- 112f. **Western Anglo-America.** A regional examination of the physical and human geographic patterns of the western portions of the United States and Canada (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor. Not open to students who have taken the old Course 71) II MWF Weaver
- 113w. **Eastern Anglo-America.** A regional examination of the physical and human geographic patterns of southeastern Canada and the eastern, southeastern and middle-western United States (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor. Not open to students who have taken the old Course 71) II MWF Weaver
114. **Historical Geography of North America** (3 cred.; jr., sr., grad.; prereq. 1, and 10 additional cred. in either geog. or hist. Not open to students who have taken the old Course 53) (*Not offered in 1951-52*)
- 117s. **The Middle East.** Environment and human occupation in their relationship to present regional differentiation within Southwestern Asia. Natural resources of the area and their development. Problems of international relations (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor) IV MWF Sopher
- 118s. **Africa.** The physical resources and their use, in the light of the competing cultures and economic forces which have helped shape the human geography of the continent (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor. Not open to students who have taken the old Course 103) III MWF Ar.
- 121w. **India and Southeast Asia.** The course deals with India and Pakistan, Farther India, Indonesia, and the Philippine Islands; the areal differentiation of the social-economic structure within the framework of physiographic regions; geographic aspects of the problems of population pressure, development of resources, and international relations (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor. Not open to students who have had the old Course 120) III MWF Broek
- 122f. **East Asia.** The physiographic features of China, Korea, and Japan, together with the forms of resource utilization in their regional diversity. Geographic aspects of the problems of population pressure, development of resources, and international relations (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or consent of instructor. Not open to students who have taken the old Course 120) IV MWF Sopher
- 126s. **Australia and New Zealand.** A geographic survey of the physical and human resources of Australia and New Zealand (2 cred.; jr., sr., grad.; prereq. 5 credits in geog. or consent of instructor. Not open to students who have taken the old Course 104) II MW Weaver
128. **Polar Regions.** An at first systematic and then regional examination of the physical environment, and of man and his way of life in the Arctic, Subarctic, and Antarctic realms. A survey is made of the principal eras of geographic discovery in these parts of the world (3 cred.; jr., sr., grad.; prereq. 1 or consent of instructor. Not open to students who have taken the old Course 125) (*Not offered. Offered in 1952-53*)
- 133f. **Introduction to Climatology.** The content and uses of our climatic record; world patterns of temperature, atmospheric circulation, moisture, and related elements; the world regional pattern of climate and its basis; uses and limitations of climatic classifications (3 cred.; jr., sr., grad.; prereq. 1 or consent of instructor) VIII MWF Borchert
- 134w. **Advanced Climatology.** The major climatic regions of the U.S., Canada, and Central America; regional types of weather, their synthesis into climatic patterns; problems of long-term changes in the climatic pattern; introduction to the literature on regional climatic problems; analogous regions on the other continents (3 cred.; jr., sr., grad.; prereq. 133 or Aero. Eng. 173 or consent of instructor) VIII MWF Borchert
136. **Geography of Vegetation** (3 cred.; jr., sr., grad.; prereq. 1 or Bot. 50, or For. 2, 3, 4, or consent of instructor) (*Not offered in 1951-52*)
- 138w-139s. **Advanced Cartography.** Exercises in the use and construction of map projections. The compilation of maps from surveys, statistical and descriptive sources and aerial photographs. Preparation of maps for display and reproduction (6 cred.; jr., sr., grad.; prereq. 70 or consent of instructor) VI-VII TTH Sopher
- 143f-144w. **Political Geography.** Scope and content of political geography as exemplified by various writers, followed by an analysis of politically important areas (6 cred.; jr., sr., grad.; prereq. 12 cred. in geog., hist., or pol. sci., or consent of instructor. Not open to students who have taken the old Course 43) VII MWF Broek

- 150w. **Agricultural Geography.** An analysis of the geographic patterns of the world's principal commercial and subsistence crops and the more broadly inclusive agricultural systems of which they are a part. Special emphasis will be placed on the ecologic, economic, and human factors which have been operative in creating the defined distributions (3 cred.; jr., sr. grad.; prereq. 1 or 41 and 10 additional cred. in geog. or econ., or consent of instructor) IV MWF Ar.
- 160s. **Development of Geographic Thought.** Objectives, subdivisions, concepts, and methods of geography, with special reference to different schools of geographic thought as expressed in literature of the last century (3 cred.; sr., grad.; prereq. 15 cred. in geog. Not open to students who have taken the old Course 155) VII MWF Broek
- 170s. **Field Course.** Field trips in the vicinity of the Twin Cities. Reports on selected topics (3 cred.; sr., grad.; prereq. 15 cred. in geog.) Ar. S Broek, Borchert

For Graduate Students Only

- 251f. **Seminar in Geography of Southeast Asia.** VIII-IX T Broek
- 252w. **Seminar in Agricultural Geography.** VIII-IX Th Weaver
- 253s. **Seminar.** Subject to be announced. VIII-IX Th Ar.
- 254f. **Seminar in Manufacturing Regions of the U.S.S.R.** VIII-IX Th Borchert
- 301f,w,s. **Research Problems.** Ar. Ar. Staff

GEOLOGY AND MINERALOGY

Department chairman—George A. Thiel

Major advisers in the College of Science, Literature, and the Arts—Professor Goldich; Associate Professors Bell and Swain; and Assistant Professor Wright.

Major sequences in the College of Science, Literature, and the Arts—A major sequence in geology should include: (1) Geol. 23-24, 25 which should be taken as early as possible; (2) Math. 50; (3) Phys. 7-8-9 (Phys. 8 and 9 are Senior College courses recommended as part of a minor); (4) a year of college chemistry; (5) a course in surveying (preferably Civil Engineering 17. See the *Bulletin of the Institute of Technology*); (6) courses in drawing are desirable, and a course in geophysics is recommended.

The following Senior College courses are required of all majors: 100 or 115, 101, 106, 107, 118, 125, 131, 144, 150, 151, plus one of the following: 110, 112, 153.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education—Professor Thiel

For a specialized curriculum in natural science, see the *Bulletin of the College of Education*.

For courses in geophysics see page 124.

Junior College Courses

There are two beginning courses in geology: Course 1-2 (with or without laboratory course A-B); Course 8, which is a one-quarter course, without laboratory, for those who do not take geology to meet a laboratory science requirement.

1f-2w.*† General Geology (Physical and Historical). A study of geologic processes and of the materials on which they operate, together with a résumé of the history of the earth and its inhabitants as recorded in the rocks (6 cred.; no prereq.) II MWF Ar.; VI MWF Ar.

* Course A-B must be completed if geology is offered as the required laboratory science.

† To receive credit for any part of this course a student must complete the parts preceding the dagger, except that students in Forestry may take 1 and A for 5 credits without completing 2 and B.

78 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- Af-Bw.* General Geology Laboratory** (Physical and Historical). The physical properties of common minerals and rocks. Determinative work and sight identification of rocks and fossils. Interpretation of land forms from maps and aerial photographs (4 cred.; with or after 1-2) I-II TTh; VI-VII MW; VI-VII TTh
- 1w-2s.*† General Geology** (Physical and Historical) (See 1f-2w) IV MWS Ar; VII MWF Ar.
- Aw-Bs.* General Geology Laboratory** (Physical and Historical) (See Af-Bw) I-II MW; III-IV MW; VIII-IX TTh
- 1s. General Geology** (Physical and Historical) (First qtr. of 1-2. See 1f-2w) II MWF Ar.; VI MWF Ar.
- As.* General Geology Laboratory** (Physical and Historical) (First qtr. of A-B. See Af-Bw) I-II TTh; III-IV TTh; VI-VII TTh
- 2f.‡ General Geology** (Historical) (Second qtr. of 1-2. See 1f-2w) IV MWF Ar.; VII MWF Ar.
- Bf.* General Geology Laboratory** (Historical) (Second qtr. of A-B. See Af-Bw) III-IV TTh
- 8f,s.§ Earth Features and Their Meaning**—An Introductory Course. A general education elective. An explanation of the natural landscape as produced by such agents as the atmosphere, water, glaciers, volcanoes and mountain building forces acting on the materials of the earth (5 cred.; no prereq.) II MTWThF Thiel
- 8w.§ Earth Features and Their Meaning** (See 8f) III MTWThF Thiel
- 23f-24w. Mineralogy.** The crystal systems; morphological, physical, and chemical characters of minerals; classification and description of common minerals. Determinative work in laboratory, blowpipe analysis, sight identification (10 cred.; soph., jr., sr.; prereq. a term of college chemistry) Lect. I MWF; rec. VIII T; lab. VI-VII TTh; other sections ar. Gruner
- 25s. Rock Study.** The occurrence and origin of rocks; their mineral and chemical composition and classification (2 cred.; soph., jr., sr.; prereq. 24) Lect. I T; rec. I Th; lab. VI-VII T; other sections ar. Goldich

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 61w. Blowpipe Analysis.** The determination of minerals by systematic blowpipe analysis (3 cred.; jr., sr.; prereq. 24) 6 hrs. ar. Gruner
- 70f. Geologic Field Methods.** Application of the plane table, altimeter, hand level, and Brunton compass to actual problems in the field (2 cred.; prereq. 25 and trigonometry) Ar. Ar. Goldich, Swain
- 100.¶ Field Work in Northern Minnesota**—July 15 to 30, approximately. Selected areas in the iron district of Minnesota. Involves preparation of geologic maps (3 cred.; jr., sr.; prereq. 25) Ar. Ar. Gruner
- 101f. Sedimentation.** Environments of sedimentation. The origin of sedimentary rocks and their primary structures; lithologic associations (3 cred.; jr., sr., grad.; prereq. 24) VII MWF Thiel
- 102w. Methods of Study of Sediments.** Methods used in the study of sediments and sedimentary rocks. Textural and mineralogical analyses of clastic and nonclastic materials (3 cred.; jr., sr., grad.; prereq. 101, 106) Lect. VI T; lab. VII-VIII TTh Thiel
- 103w-104s. Micropaleontology.** The study and classification of Foraminifera, Ostracoda, and other small fossils, and their use in stratigraphy (6 cred.; jr., sr., grad.; prereq. 107) Ar. Ar. Swain
- 106f. Petrography.** Optical methods for identification of minerals in thin sections and immersion media; introduction to microscopic work on rocks (3 cred.; jr., sr., grad.; prereq. 25) Lect. IV T; rec. IV Th; lab. VI-VII TTh; other sections ar. Goldich

* Course A-B must be completed if geology is offered as the required laboratory science.

† To receive credit for any part of this course a student must complete the parts preceding the dagger, except that students in Forestry may take 1 and A for 5 credits without completing 2 and B.

§ Not open to students who have had Course 1 or Nat.Sci. 6 in General Studies. Cannot be followed by Geology 1 for credit. May be followed by Geology 2 or Geology A with instructor's permission. Does not satisfy the Junior College requirement for science unless accompanied or followed by Course A.

¶ A more comprehensive report will be required for Graduate School credit.

- 107f. Invertebrate Paleontology.** Morphology and classification of important fossil groups other than Foraminifera and Ostracoda (3 cred.; jr., sr., grad.; prereq. 25 or permission of instructor) Lect. and rec. VI-VII T, lab. ar. Bell
- 108w-109s. Advanced Invertebrate Paleontology.** Procedures in taxonomy; international rules of zoological nomenclature; techniques and elements involved in preparation of a paleontologic report (6 cred.; jr., sr., grad.; prereq. 107) VIII-IX F and ar. Bell
- 110f-111w. Economic Geology.** The nature, genesis, and distribution of mineral deposits; relation of mineral deposits to structure and surficial alteration (6 cred.; jr., sr., grad.; prereq. 25) II MWF Schwartz
- 112s. Petroleum Geology.** The composition and origin of petroleum, methods of exploration and the geology of the important oil producing regions (3 cred.; sr., grad.; prereq. 125 and 151) I MWF Swain
- 114s. Geology of Minnesota and Adjoining Areas.** The structure, stratigraphy, and lithology of the rocks and their associated mineral resources (3 cred.; jr., sr., grad.; prereq. 25) IV MWF Thiel
- 115. Field Work in Southeastern Minnesota**—July 15 to 30, approximately. Stratigraphic methods and principles as illustrated by study of Cambrian and Ordovician rocks (3 cred.; jr., sr., grad.; prereq. 25) Bell
- 118f. Principles of Geomorphology.** Origin and evolution of landforms in different climatic environments. Systematic study of geologic processes such as weathering, mass movement, running water, subsurface water, waves and currents, and diastrophism. Map study, library work, and field trips (3 cred.; jr., sr., grad.; prereq. A and 2) VI MWF Wright
- 119aw.* Geomorphology of Eastern United States.** General geology of the physiographic provinces east of the Great Plains, with emphasis on the landforms and the Cenozoic history. Map study (3 cred.; jr., sr., grad.; prereq. 118 or 125) Lect. II TTh; lab. ar. Wright
- 119b.* Geomorphology of Western United States.** General geology of the physiographic provinces from the Great Plains westward, with emphasis on the landforms and the Cenozoic history. Complementary to Geol. 119a. Map study (3 cred.; jr., sr., grad.; prereq. 118 or 125) (*Not offered. Offered in 1952-53*)
- 120s. Glacial Geology.** Origin of glaciers, mechanics of mountain and continental glaciers, stratigraphy and chronology of the Pleistocene in glaciated and nonglaciated areas, causes of glaciation. Field trips (3 cred.; jr., sr., grad.; prereq. A and 2) II MWF Wright
- 121f. Crystallography.** The symmetry relations in the thirty-two crystal classes. Crystal drawings and measurements. Projections and mathematical calculations (3 cred.; jr., sr., grad.; prereq. trigonometry and a year of college chemistry) Ar. Ar. Gruner
- 124. Metamorphic Geology.** Conditions, processes, and results of metamorphism (3 cred.; jr., sr., grad.; prereq. 131) (*Not offered in 1951-52. Offered in alternate years*)
- 125f. Structural Geology.** Primary and secondary structures of sedimentary, igneous, and metamorphic rocks; mechanics of rock deformation; use in field mapping and in interpretation of geologic history (3 cred.; jr., sr., grad.; prereq. 25) IV MWF Wright
- 131w-132s. Petrology.** Petrographic description of igneous, metamorphic, and sedimentary rocks; their mineral and chemical composition, classification, origin, and alteration. Laboratory methods; preparation of samples (8 cred.; jr., sr., grad.; prereq. 106) Lect. III MW; rec. III F; lab. VI-VII WF Goldich *
- 137s. Principles of Chemical Geology.** A study of geochemical literature. Methods in geochemical research and application of chemical and physical chemical principles to geologic problems (3 cred.; jr., sr., grad.; prereq. 25) Ar. Ar. Gruner
- 140w-141s. Applied Petrography.** Determination of ore and gangue minerals, microscopic studies of paragenesis of ores and other mineral associations. Practical problems in mining and geology (6 cred.; jr., sr., grad.; prereq. 131) Lect. ar.; lab. VIII-IX MW Goldich
- 144w. Geologic Maps.** Laboratory problems on construction and interpretation of geologic maps, cross-sections, structure contour maps, and mine maps. Fault problems and other three-dimensional analyses of geologic structures (3 cred.; jr., sr., grad.; prereq. 125) Lab. VI-VIII MW Wright
- 145s. Aerial Photographs.** Elements of photogrammetry, construction of mosaics and of planimetric and topographic maps, stereovision, geologic and geomorphic interpretation, field use (3 cred.; jr., sr., grad.; prereq. A and 2) VI-VIII TTh Wright

* Courses 119a and 119b are offered in alternate years.

80 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 146f-147w. **Soil Mineralogy.** The crystal systems; morphological, physical, and chemical characters of minerals; classification and description of common minerals. Determinative work in laboratory, blowpipe analysis, sight identification. For students in soil science and agriculture and civil engineering (8 cred.; jr., sr., grad.; prereq. a term of college chemistry) Ar. Ar. Gruner
- 150.* **Field Geology**—June 15 to July 15. Detailed systematic work conforming with standards of official surveys. Preparation of geologic maps, structure sections, reports; paragenesis of ores and their relations to geologic structures. Field, Black Hills, South Dakota (6 cred.; jr., sr., grad.; prereq. 125) Ar. Ar. Gruner
- 151w-152s. **Stratigraphy.** Principles and methods illustrated by selected stratigraphic reports; stratigraphic history of United States; index fossils of each geologic period; term paper in 152 (6 cred.; jr., sr., grad.; prereq. 107) IV MWF (w), II MWF (s)
- 153f. **Subsurface Stratigraphy.** The application of sample logs, electrical logs, and other methods to the detailed stratigraphy of the subsurface in selected areas (3 cred.; jr., sr., grad.; prereq. 151) Lect. II T; lab. VI-VII TTH Swain
- 161w. **Advanced Mineralogy.** Use of X-rays for identification of minerals. Crystalline state. Isomorphism and polymorphism. Phase rule applied to mineralogy. Structures of silicates. Synthesis of minerals (3 cred.; jr., sr., grad.; prereq. 25, 121) Ar. Ar. Gruner
- 166w-167s. **Mineralography.** Methods of studying opaque minerals and applications to problems in ore genesis and history (6 cred.; sr., grad.; prereq. 111, 131) VI-VII MWF (w), Ar. (s) Schwartz
- 170f,w,s. **Geologic Problems.** Individual research in laboratory, or field problems at Senior College and graduate levels (Cred. ar.; jr., sr., grad.; prereq. permission of major adviser) Ar. Ar. Staff
- 175s. **Field Work in Glacial Geology and Geomorphology.** Mapping of surficial deposits and landforms of a selected area in Minnesota. One day of field work each week (3 cred.; jr., sr., grad.; prereq. 118, 120) Wright

For Graduate Students Only

- 211-212-213. **Stratigraphic Paleontology.** Bell, Swain
214. **Seminar in Economic Geology.** Goldich, Gruner, Schwartz
215. **Advanced Course in Principles of Economic Geology.** Schwartz
216. **Mining Geology.** Schwartz
217. **Research Course in Petroleum Geology.** Swain
218. **Advanced Structural Geology.** Schwartz
241. **Field Course in Geology.** Staff
- 243-244. **Research Course in Geology.** Staff
- 245-246. **Research Course in Sedimentation.** Thiel
247. **Research in Geomorphology and Pleistocene Geology.** Wright
248. **Seminar in Geomorphology and Pleistocene Geology.** Wright

GERMAN

Department chairman—Frank H. Wood

Major advisers in the College of Science, Literature, and the Arts—Associate Professors Wood and Downs.

Major sequence in the College of Science, Literature, and the Arts—Eighteen credits from Group A or Group B, and 15 additional credits in courses, other than 73-74-75, numbered 50 or above.

A. Courses 50-51-52, 53-54-55, 56-57, 58, 66-67-68, 70, 80.

B. Courses 60, 61; 62, 63, 64, 65, 70, 71, 72, 77, 90, 91, 92.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education—Associate Professor Wood.

Requirements for a teacher's certificate—Major recommendation: Courses 50-51-52, 53-54-55, 56-57, 58, 71 or 72, and 15 additional credits in courses, other than 73-74-75, numbered 50 or above.

* A maximum of 6 credits will be granted after field report is completed. The course will not be given for fewer than six students.

Minor recommendation: Courses 50-51-52, 58, and 8 additional credits in courses, other than 73-74-75, numbered 50 or above.

Sequence of courses for academic students—Without entrance German: Courses 1, 2, 3, 4, other courses numbered 50 or above. With one year of entrance German: Courses 2, 3, 4, other courses numbered 50 or above. With two years of entrance German: Courses 3, 4, other courses numbered 50 or above. With three years of entrance German: Course 4 and other courses numbered 50 or above. With four years of German: courses numbered 50 or above.

Course 33 is recommended for premedical students.

Junior College Courses

- 1f-2w-3s.* Beginning Course—Standard Section.** Five class meetings a week. Using the oral approach, the course aims to give a knowledge of the elements of grammar and the facility to read and write easy German (15 cred.; no prereq.). Students submitting one year of high school German for entrance take Course 2; those offering two years take Course 3) I MTWThF; II MTWThF; III MTWThF; IV MTWThF; V MTWThF
- 1w-2s. Beginning Course—Standard Section** (First 2 qtrs. of 1-2-3. See 1f-2w-3s) I MTWThF; II MTWThF
- 1s. Beginning Course—Standard Section** (First qtr. of 1-2-3. See 1f-2w-3s) I MTWThF; II MTWThF
- 1af-2aw-3as.* Beginning Course—Conversational Section.** Ten class meetings a week: five hours of demonstration (introduction to texts dealing with real-life situations; necessary grammar) plus five hours of intensive conversational drill in sections small enough to assure each student individual attention. Less home study required than in standard or reading courses (15 cred.; no prereq.) Demonstration III MTWThF plus laboratory drill IV MTWThF
- 1bf-2bw-3bs.* Beginning Course—Reading Section.** Five class meetings a week. Aim of the course: to develop reading proficiency in the shortest time by concentrating from the outset on vocabulary building and reading techniques and reducing grammar to a minimum (15 cred.; no prereq.) II MTWThF
- 2f-3w. Beginning Course—Standard Section** (Second and third qtrs. of 1-2-3. See 1f-2w-3s) III MTWThF; VII MTWThF
- 3f. Beginning Course—Standard Section** (Third qtr. of 1-2-3. See 1f-2w-3s) I MTWThF; II MTWThF; V MTWThF; VI MTWThF
- 4f.8 Intermediate German** (5 cred.; prereq. 3 or 3a or 3b, or three years of high school German) III MTWThF; VII MTWThF
- 4w.8 Intermediate German** (See 4f) I MTWThF; VI MTWThF
- 4s.8 Intermediate German** (See 4f) III MTWThF; VII MTWThF
- 20w,s. Reading and Speaking German.** Short stories and plays are read to develop reading fluency; classes are conducted in German (5 cred.; prereq. German 4, four years of high school German, or equiv.) III MTWThF
- 24f-25w-26s. Chemical German** (9 cred.; chemists, pharmacists, miners; no prereq.) II MWF
- 24af-25aw-26as. Chemical German** (12 cred.; pharmacists and agricultural students; no prereq.) II MTWF
- 27f-28w-29s. Chemical Prose** (9 cred.; chemists, pharmacists, miners; prereq. two years of high school German or one year of college German) II MWF
- 33s.8 Medical German** (5 cred.; premed.; prereq. 3 or 3a or 3b) II MTWThF
- 41f-42w-43s. Readings from German Chemical Periodicals** (6 cred.; sr.; prereq. 26 or equiv.) I TTh

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

* The sequence of courses that must be followed is 1-2-3, or 1a-2a-3a, or 1b-2b-3b.
§ For premedical students 33 is recommended instead of 4.

- 50f-51w-52s. Composition.** Review of German grammar; writing dialogs, with emphasis upon colloquial usage, and original compositions (6 cred.; jr., sr.; prereq. 4) VI MF Downs
- 53f-54w-55s. Conversation.** A work of fiction and a conversational manual provide the basis for oral practice to develop an elementary command of spoken German (6 cred.; jr., sr.; prereq. 4) VI TTh Menze
- 56f-57w. Essay Writing.** Short German essays are written at home on topics developed orally in class; corrections are discussed with the students (6 cred.; jr., sr.; prereq. 52) III TThS Pfeiffer
- 58s. German Pronunciation.** Study of the "Hochsprache" as the established standard of correct pronunciation with practical exercises in phonetic transcription. Critical evaluation of individual pronunciation, utilizing modern recording instruments (2 cred.; jr., sr.; prereq. 4) III TTh Downs
- 59w,s. German Pronunciation and Diction.** (Open only to candidates for the German play) (1 or 2 cred.; jr., sr.; prereq. 3) Ar. Ar. Ar.
- 60w. Modern Writers.** Writers and literary movements of the twentieth century are represented in selected works of Mann, Schnitzler, Kafka, Rilke, and others (3 cred.; prereq. 4 or four years of high school German) II MWF Menze
- 61s. Lyrics and Ballads.** Representative poets including Goethe, Heine, George, and Rilke are read and discussed; poems set to music by Schubert, Schumann, Brahms, and others are presented in recordings (3 cred.; jr., sr.; prereq. 3 cred. above 59) II MWF Pfeiffer
- 62. Nineteenth-Century Prose** (3 cred.; jr., sr.; prereq. 3 cred. above 59) (Not offered in 1951-52)
- 63f. Classical Drama.** Reading and discussion of classical dramas chosen from the works of Lessing, Goethe, Schiller (3 cred.; jr., sr.; prereq. 60 or 4 with a grade of B) IV MWF Ramras
- 64w. Nineteenth-Century Drama.** Reading and discussion of selected works of the outstanding dramatists of the nineteenth century, Kleist, Grillparzer, Hebbel (3 cred.; jr., sr.; prereq. 3 cred. above 59) IV MWF Ramras
- 65s. Modern Drama.** Reading and discussion of selected dramas representing the more recent movements in German literature, naturalism, impressionism, expressionism (3 cred.; jr., sr.; prereq. 3 cred. above 59) IV MWF Ramras
- 66f-67w-68s. Advanced German Conversation.** An accelerated course in the oral language for students advanced beyond German 55 or German 3a (6 cred.; jr., sr.; prereq. 3a or 55) IV TTh Menze
- 70f-71w-72s. Survey of Literature.** 70f: Early German literature. Reading and discussion of Old High German and Middle High German classics in modern German translation; 71w: From the Renaissance through Goethe and Schiller; 72s: From Romanticism to the twentieth century (9 cred.; jr., sr.; prereq. 3 cred. above 59) III MWF Downs (f), Menze (w), Pfeiffer (s)
- 73f-74w-75s. German Classics in English Translation.** (This course requires no knowledge of the German language.) German literature from medieval to modern times is discussed in its relation to other literatures; representative works are read in translation. Topics include *Parzival*, *Tristan and Isolde*, *Nibelungenlied*, minnesinger and meistersinger; Humanism, Reformation and Counter-Reformation; Goethe, Schiller, and the new humanism; Romanticism; Heine, Wagner, Nietzsche; Hauptmann, Mann, Werfel (6 cred.; jr., sr.; no prereq.) VII MF Downs (f), Wood (w), Pfeiffer (s)
- 77s. Faust I** (3 cred.; jr., sr.; prereq. 62 and 3 additional cred. above 59) VII MWF Wood
- 80. History of the German Language** (3 cred.; jr., sr.; prereq. 6 cred. above 60) (Not offered in 1951-52)
- 90f-91w-92s. German Civilization and Culture.** Review of development of personalities, movements, tendencies and institutions in respect to anthropology, history, science, geography, dialects, literature, art, philosophy, education, etc. Class discussions based on special readings in respective fields, supplemented with slides, lectures and other demonstration materials (9 cred.; jr., sr.; prereq. 3 cred. above 59) II MWF Wood

For a complete list of graduate offerings see the Bulletin of the Graduate School.

Courses numbered 100 to 199 are open to seniors upon recommendation of advisers.

GERMAN LITERATURE

- 130-131-132. *The Age of Luther* (9 cred.; sr., grad.; prereq. 70 or equiv. and 11 cred. above 59) (*Not offered*)
- 143f-144w-145s. *The Classical Period: Schiller* (9 cred.; sr., grad.; prereq. 71 and 11 cred. above 59 or equiv.) VIII-IX Th Ramras
- 150-151-152. *Studies in German Literature of the Nineteenth Century* (9 cred.; sr., grad.; prereq. 72 or equiv. and 11 cred. above 59) (*Not offered*)
- 153-154-155. *Modern Literature. A survey from 1880 to the present* (9 cred.; sr., grad.; prereq. 72 or equiv. and 11 cred. above 59) (*Not offered*)
- 156-157-158. *Problems in German Literary Criticism: History, Methods, Bibliography* (9 cred.; sr., grad.; prereq. 70-71-72 or equiv. and 11 cred. above 59) (*Not offered in 1951-52*)
- 160f-161w-162s. *Lyric Poetry* (9 cred.; sr., grad.; prereq. 72 or equiv. and 11 cred. above 59) VIII-IX F Wood
- 163-164-165. *The Twentieth-Century Novel.* Special emphasis will be placed on Schnitzler, Werfel, Hesse, Thomas and Heinrich Mann, Kafka and their contemporaries (9 cred.; sr., grad.; prereq. 70-71-72 or equiv. and 11 cred. above 59) (*Not offered in 1951-52*)
- 166f-167w-168s. *History of German Literature.* Bibliographical review and orientation course from 800 to the present. Required of all graduate majors and minors in German (3 cred.; prereq. 70 or equiv. or 11 cred. above 59) VIII-IX M Staff
- 173f-174w-175s. *German and English Literary Relations in the Seventeenth, Eighteenth, Nineteenth, and Twentieth Centuries* (9 cred.; sr., grad.; prereq. 70 and 11 cred. above 59) VIII-IX T Pfeiffer

LINGUISTICS AND PHILOLOGY

- 110-111-112. *Middle High German.* Linguistic introduction and readings in Middle High German literature (9 cred.; sr., grad.; prereq. 70 and 11 cred. above 59) (*Not offered in 1951-52*)
- 113f-114w. *Gothic.* Introduction to Germanic linguistics and to a comparative study of Indo-European languages (3 cred. per qtr.; sr. with completed major sequence, grad.; prereq. 80 and 11 cred. above 59) VIII-IX W Downs
- 118-119-120. *Old High German.* Linguistic introduction and readings in Old High German literature (3 cred. per qtr.; sr. with completed major sequence, grad.; prereq. 80 and 11 cred. above 59) (*Not offered in 1951-52*)
125. *History of the German Language* (3 cred.; sr., grad.; prereq. 80 and 11 cred. above 59) (*Not offered in 1951-52*)
126. *Historical German Grammar* (3 cred.; sr., grad.; prereq. 110-111-112 or 113-114) (*Not offered in 1951-52*)
- 176-177. *Problems and Research Trends in German Philology.* 176: The Germanic languages; 177: The Germanic literary tradition. A comparative discussion of native and foreign records of the Old German period (6 cred.; sr., grad.; prereq. two Germanic dialects) (*Not offered in 1951-52*)
183. *Germanic Heroic Poetry* (3 cred.; sr., grad.; prereq. 8 cred. in literature) (*Not offered in 1951-52*)
- 194s. *Old Saxon* (3 cred.; sr., grad.; prereq. 113) VIII-IX W Downs
- Scand.195. *Introduction to Old Norse Language and Literature.* (4 cred.; sr., grad.; prereq. 113) (*Not offered in 1951-52*)

For graduate courses in German see the *Bulletin of the Graduate School.*

GREEK

See Classics, page 52.

HISTORY

Department chairman—August C. Krey

Major advisers in the College of Science, Literature, and the Arts—Professors Jones, Krey, Osgood, Steefel, Willson, and Wolf.

Major sequence in the College of Science, Literature, and the Arts—Students will take the equivalent of at least two 9-credit courses numbered from 65 to 170. These will normally come in the junior year. In the senior

year, students, if they have maintained to the end of the junior year an honor point average of 1.5 in all work, will take at least one course numbered 170 or above; all other majors in history will take an additional number of courses with numbers 65 to 170 in the senior year, but will not take courses numbered 170 or above. Normally a history major will consist of Senior College courses aggregating at least 27 credits. Credits in Pol.Sci. 153, 192-193, will be accepted toward the major in history.

(Prerequisites: Courses 1-2-3 or 4-5-6 or 14-15-16, and 20-21-22.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education—Professor Krey.

Requirements for a teacher's certificate—Major recommendation: a minimum of 45 credits; at least 18 credits must be in Senior College courses. See the *Bulletin of the College of Education*.

Minor recommendation: a minimum of 27 credits of which at least 9 credits must be in Senior College courses.

No major recommendation to teach history will be given unless the candidate has taken the general course in American history, Hist. 20-21-22, or equivalent. For other history courses the same provisions apply as for S.L.A. majors in history, noted above.

For a specialized curriculum in social studies see the *Bulletin of the College of Education*.

Students planning to do advanced work in history should get a reading knowledge of French and German in their early undergraduate years.

Junior College Courses

Most of these courses are announced for f-w-s or w-s; but students may enter any quarter.

1f-2w-3s. Civilization of the Modern World. 1f: The rise of the European state system as framework within which Western civilization developed, and the economic, cultural, political, intellectual, and religious implications of the emerging system; 2w: The struggle for control over the Western states system, and the emergence of liberal democracy in the modern world; 3s: The impact of industrialism upon Western and world civilization, the origins and backgrounds of the twentieth-century world (9 cred.; no prereq.) Lect. II TTh Wolf; rec. sections as follows: I M; I T; I W; I Th; II M; II W; II F; II S; III T; III W; III Th; IV T; IV Th; VI M; VI W; VI Th; VII M; VII T; VII W; VII Th

1w-2s. Civilization of the Modern World (Two qtrs. of 1-2-3. See 1f-2w-3s) Lect. II MW Bowditch; rec. sections as follows: II Th; II F; III Th; III F; IV Th

3f. Civilization of the Modern World (Third qtr. of 1-2-3. See 1f-2w-3s) Lect. II MW Bowditch; rec. sections as follows: II Th; II F; III Th; III F; IV Th

4f-5w-6s. English History. 4f: Conquest and settlement, the feudal age, foreshadowings of limited monarchy and popular government; 5w: Tudors, Stuarts, and Hanoverians, parliament versus king, colonization and American Revolution; 6s: The coming of democracy, Britain and Europe, Empire and Commonwealth (9 cred.; no prereq.) Lect. II MW Burt; rec. sections as follows: I T; I Th; II T; II Th; III T; III Th; VII T; VII Th

11f-12w-13s. Medieval History. 11f: The Roman heritage, the "age of faith," the feudal age; 12w: The crusades, towns and trade, learning and literature, Gothic; 13s: Renaissance and Reformation, the rise of national states, exploration and discovery (9 cred.; for music and art students; others by permission of instructor; no prereq.) IV MWF Thompson

14f-15w-16s. Ancient Civilization (9 cred.; no prereq.) VII TWTh Jones

14Af-15Aw-16As. Ancient Civilization with Basic Readings (15 cred.; no prereq.) VII MTWThF Jones

- 17s. Modern Economic and Social Problems.** A historical survey of contemporary problems created by changes in the organization and methods of production and trade, in class relationships, political institutions and ideas; and of the efforts made by farmers, manufacturers, bankers, wage-earners, consumers, voluntary associations, and governments to find conservative, reformist, or revolutionary solutions (5 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq.) Lect. III TThS; rec. sections IV TTh; VIII TTh Heaton
- 20f-21w-22s. American History.** A survey of the political, economic, and social history of the United States with emphasis on the forces that resulted in the emergence of modern America. 20f: Colonial and Early National Period; 21w: Sectionalism and National Development; 22s: Modern America (9 cred.; soph., jr., sr.; no prereq.) Lect. II TTh or VIII TTh Osgood, Davies; rec. sections as follows: II F; IV T; IV Th; IV F; VI W; VI F; VII F; VIII M

Senior College Courses

Except where otherwise stated, there are no prerequisites for the courses numbered 50 to 169. Most of these courses are announced for f-w-s or w-s, but students may enter any quarter.

Senior College courses with numbers less than 100 are open to third quarter sophomores who have an average grade of at least C in 9 credits of history. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

The first four courses listed below are survey courses designed for students who do not intend to major in history.

- 50f-51w-52s. Ancient Civilization** (9 cred.; jr., sr.) Not open to those who have credit for 14-15-16. VII TWTh Jones
- 53f-54w-55s. Civilization of the Modern World** (9 cred.; jr., sr.) Not open to those who have credit for 1-2-3. Lect. II TTh Wolf; rec. sections as follows: II M; II W; II F; III M; IV W; VII T
- 56f-57w-58s. History of England** (9 cred.; jr., sr.) Not open to those who have credit in 4-5-6. Lect. II MW Burt; rec. sections as follows: II T; II F
- 59f-60w-61s. American History** (9 cred.; jr., sr.) Not open to those who have credit in 20-21-22. Lect. II TTh or VIII TTh Osgood, Davies; rec. sections as follows: IV T; III Th; VII T
- 62f-63w. Cultural History of China**, 62f: Prehistoric times to A.D. 600; 63w: 600 A.D. to the present (6 cred.; jr., sr.; may be taken in conjunction with Art 178s) VII MWF Mather
- 65-66-67. Medieval European History**. 65: Decline of the Roman Empire; 66: The Feudal Age; 67: The Crusades, Gothic Architecture, Thomas Aquinas (9 cred.; jr., sr.) (Not offered in 1951-52)
- 65af-66aw-67as. Renaissance and Reformation**, 65af: The Age of Dante and Petrarch; 66aw: Italian Renaissance; 67as. The European Renaissance and Reformation (9 cred.; jr., sr.) III MWF Krey
- 68w-69s. American History since 1900** (6 cred.; jr., sr.) VII MWF Davies
- 70f-71w-72s. English Constitutional History**, 70f: The medieval period; 71w: Early modern times; 72s: In the last two centuries (9 cred.; open to prelegal soph. with at least a C average in Courses 4-5-6, 1-2-3, or in all their college work, and to all jrs. and srs.) I MWF Thompson, Willson
- 76f-77w-78s. Canadian History and Canadian-American Relations**, 76f: Rise and fall of the French Empire in America; 77w: From British conquest to federation; 78s: The Dominion of Canada from its formation (9 cred.; jr., sr.) III TThS Burt
- 83as. American Agricultural History**. Development of American agriculture from the Colonial Period to the present (3 cred.; soph., jr., sr.) I TThS Loehr
- 86f-87w-88s. American Colonies**, 86f: In the seventeenth century; 87w: In the eighteenth century; 88s: The Revolutionary crisis (9 cred.; jr., sr.) II MWF Tyler
- 89s. Economic History of Modern War**. Economic aspects of the French Revolution and Napoleonic Wars, and of World War I and World War II (3 cred.; jr., sr.) VI MWF Bowditch
- 90f-91w-92s. The American West**. An interpretation of the American frontier from its establishment in the colonies to its disappearance as a factor in American life. 90f: The Colonial frontier; 91w: Mid-America; 92s: The Far West (9 cred.; jr., sr.) III TThS Osgood

- 93f-94w-95s. American Diplomatic History.** 93f: American diplomacy, 1776-1846; 94w: The period of national development; 95s: The United States as a world power (9 cred.; jr., sr.) VI MWF Beatty
- 97f-98w-99s. Minnesota and the Northwest** (9 cred.; jr., sr.) III MWF Jordan
- 100f-101w-102s. History of the Ancient Near East** (9 cred.; jr., sr., grad.) I TThS Jones
- 100a-101a-102a. History of Greece to 200 B.C.** (9 cred.; jr., sr., grad.) (Not offered in 1951-52)
- 100b-101b-102b. History of Rome** (9 cred.; jr., sr., grad.) (Not offered in 1951-52)
- 106f-107w-108s. Continental Europe.** 106f: 1559-1661, the era of the Thirty Years' War; 107w: 1661-1774, the age of Louis XIV, the "Age of Reason," and the "Enlightened Despots"; 108s: 1774-1815, the French Revolution and the Napoleonic Empire (9 cred.; jr., sr., grad.) IV MWF Steefel
- 106a-107a-108a. Continental Europe.** 106a: Reconstruction after the Napoleonic wars, Liberalism and Nationalism, the Revolutions of 1820, 1830, 1848; 107a; Napoleon III, the first "Modern" dictator; making the kingdom of Italy and the 2nd German Reich; 108a: 1871-1914, forty years of peace and preparation for war (9 cred.; jr., sr., grad.) (Not offered in 1951-52)
- 109f-110w-111s. Europe in the Twentieth Century** (9 cred.; jr., sr., grad.) I MWF Deutsch
- 112f-113w-114s. Economic History of Europe.** 112f: Economic life in ancient and medieval times; 113w: Economic developments in the early modern world; 114s: Economic developments since 1750 (9 cred.; jr., sr., grad.) II TThS Heaton
- 115-116-117. European Overseas Expansion** 115: Voyages of discovery and overseas expansion, 1400-1600; 116: Colonial rivalries in the West Indies, East Indies, and India, 1600-1815; 117: Imperialism since 1850. (9 cred.; jr., sr., grad.) (Not offered in 1951-52)
- 118as. Scandinavia during World War II** (3 cred.; jr., sr., grad.; prereq. 106a-107a-108a or 122-123-124 or consent of instructor) VI MWF Ar.
- 120f-121w. Modern France** 120f: Political, social, and economic history of France from Vienna settlement to the establishment of the Third Republic; 121w: The struggle of the Third and Fourth Republics to meet the challenge of the twentieth century (6 cred.; jr., sr., grad.; prereq. 9 cred. in hist. or 15 cred. in soc. sci. or major in French) VI MWF Bowditch
- 122f-123w-124s. History of the Scandinavian Countries** (9 cred.; jr., sr., grad.) III MWF Lindberg
- 125f-126w-127s. Russia.** 125f: The origins of the Slavs, the eastward movement and the rise of the principality of Moscow; 126w: The Empire from Peter the Great through the Great Reforms of Alexander II; 127s: From Alexander II to the present (9 cred.; jr., sr., grad.) IV MWF Anderson
- 125af-126aw-127as. Eastern Europe and the Middle East in the 19th and 20th Centuries.** The Balkan countries, Poland, Hungary, Czechoslovakia, Turkey, Persia, Afghanistan, the Arabic People. 125af: The Balkan countries, Poland, and Hungary up to World War I; 126aw: The post-World War I states in this area including Czechoslovakia and Albania up to World War II; 127as: The Islamic Middle East, 1800 to the present (9 cred.; jr., sr., grad.; prereq. 1-2-3) III MWF Anderson
- 128f-129w-130s. Modern England.** Tudor and Stuart periods. 128f: 1485-1588, from Henry VII to the defeat of the Spanish Armada; 129w: 1588-1642, from the Spanish Armada to the English Civil Wars; 130s: 1642-1714, from the civil wars to the death of Queen Anne (9 cred.; jr., sr., grad.) II MWF Willson
- 128a-129a-130a. Modern England, 1714 to the Present.** 128a: 1714-1783, the eighteenth century; 129a: 1783-1867, the coming of democracy; 130a: 1867-1945, democracy, socialism, empire, and war (9 cred.; jr., sr., grad.) (Not offered in 1951-52)
- 131f. Economic Developments in the Scandinavian Countries in the Last Half-Century** (3 cred.; jr., sr., grad.; prereq. a course in economic theory, modern economic history or consent of instructor) VI MWF Ar.
- 134f-135w-136s. World War II.** (9 cred.; jr., sr., grad.) II MWF Deutsch
- 143f-144w-145s. American Folklore** (9 cred.; jr., sr., grad.) I MWF Jordan
- 146f-147w-148s. American Economic and Social History.** 146f: Colonial life; 147w: From the Revolution to 1860; 148s: Developments since 1860 (9 cred.; jr., sr., grad.) II TThS Loehr
- 149f-150w-151s. Social and Intellectual History of the United States** (9 cred.; jr., sr., grad.) III MWF Tyler
- 152-153. The Immigrant in American History and Life.** A chapter in social, religious, cultural, and political history (6 cred.; jr., sr., grad.) (Not offered in 1951-52)
- 154f-155w-156s. Canadian History and Canadian-American Relations.** 154f: Rise and fall of the French Empire in America; 155w: From British conquest to federation; 156s: The Dominion of Canada from its formation (9 cred.; grad.) III TThS Burt

157f-158w-159s. Survey of Latin-American History. 157f: The colonial period; 158w: The Latin-American republics; 159s: Recent Latin-American history (9 cred.; jr., sr., grad.) IV MWF Beatty

168w-169s. Readings in the Works of Great Historians (6 cred.; sr., grad.) This course is required of all candidates for the Ph.D. degree. VIII-IX M Steefel

Courses numbered 170 to 200 are open to seniors and to graduate students upon recommendation of advisers; prerequisites are appropriate lecture courses and consent of the department.

170f-171w-172s.† Selected Readings in Ancient History (9 cred.; sr., grad.) Ar. Ar. Jones

173f-174w-175s.† Selected Readings in Medieval and Renaissance History (9 cred.; sr., grad.) VIII-IX W Krey and Thompson

173af-174aw-175as.† Selected Readings in Medieval English History (9 cred.; sr., grad.) Ar. Ar. Thompson

SELECTED READINGS IN EUROPEAN HISTORY

176f-177w-178s.† Selected Readings in Seventeenth-Century France: The Age of Enlightenment (9 cred.; sr., grad.; prereq. reading knowledge of French) VIII-IX M Wolf

176af-177aw-178as.† Russian History (9 cred.; sr., grad.; prereq. 125-126-127 and a reading knowledge of Russian, German, or French, or the consent of the instructor) VII VIII M Anderson

176bf-177bw-178bs.† Scandinavian History (9 cred.; sr., grad.) Ar. Ar. Lindberg

176cf-177ew-178cs.† Recent European History (9 cred.; sr., grad.; prereq. lect. course in twentieth-century Europe or World War II, or consent of instructor) VI-VII W Deutsch

179f-180w-181s.† Selected Readings in European Economic History 1300-1700 (9 cred.; sr., grad.) VI-VII T Heaton

182f-183w-184s.† Selected Readings in English History, Tudor and Stuart Periods (9 cred.; sr., grad.) VIII-IX Th Willson

SELECTED READINGS IN AMERICAN HISTORY

185f-186w-187s.† Problems of the Eighteenth Century; Some Phases of Early American Social and Intellectual History (9 cred.; sr., grad.) VI-VII Th Tyler

185af-186aw-187as.† The West in American History (9 cred.; sr., grad.) Ar. Ar. Osgood

185bf-186bw-187bs.† American Diplomatic History (9 cred.; sr., grad.) VI-VII T Beatty

185cf-186cw-187cs.† Third Party Movements since the Civil War (9 cred.; sr., grad.) VI-VII T Stephenson

185df-186dw-187ds.† Minnesota and the Northwest (9 cred.; sr., grad.) VIII-IX W Jordan

188f-189w-190s.† American Economic History (9 cred.; sr., grad.) VI-VII Th Loehr

191f-192w-193s.† Selected Readings in Canadian History and Canadian-American Relations. (9 cred.; sr., grad.) Ar. Ar. Burt

194-195-196.† Selected Readings in Latin-American History (9 cred.; sr., grad.; prereq. reading knowledge of Spanish) (*Not offered in 1951-52*)

For Graduate Students Only

200f. Historical Bibliography and Criticism (3 cred.) Required of candidates for advanced degrees in history who do not present evidence of similar training elsewhere. VIII-IX M Steefel and others

208f-209w-210s.† Seminar in American History (9 cred.) Ar. Ar. Loehr

208af-209aw-210as.† Seminar in American History (9 cred.) Ar. Ar. Osgood

208bf-209bw-210bs.† Seminar in American History (9 cred.) Ar. Ar. Stephenson

221f-222w-223s.† Seminar in Modern European Economic History (9 cred.) Ar. Ar. Heaton

224f-225w-226s.† Seminar in Modern European History (9 cred.; prereq. reading knowledge of French and German or consent of instructor) Ar. Ar. Steefel

230f-231w-232s.† Seminar in Ancient History (9 cred.) Ar. Ar. Jones

240-241-242.† Seminar in Latin-American History. (9 cred.) (*Not offered*)

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

HOME ECONOMICS

School of Home Economics

Director—Louise A. Stedman

The courses in Home Economics, which are scheduled below, are open to students from the College of Science, Literature, and the Arts, as well as students from other colleges.

Students registered in colleges other than Agriculture, Forestry, Home Economics, and Veterinary Medicine, who wish to take courses not listed below must have the written approval of the director of the School of Home Economics.

Students from colleges other than Agriculture, Forestry, Home Economics, and Veterinary Medicine who wish to take courses in related art should choose their courses, to avoid duplication of content, according to the following sequences which have been planned to accommodate non-majors:

1. Home Economics 56 and 57; Home Economics 120 or
2. Home Economics 20; Home Economics 57; Home Economics 120 or
3. Family Life 15; Home Economics 120.

Junior College Courses

- 1f. Choice and Care of Clothing.** Guidance in planning, selecting and caring for the wardrobe. Principles of design and color as they relate to dress and personal appearance, and basic textile knowledge which should help the consumer (4 cred.; fr.; not open to home economics seniors, men, or students who have had G.C. 15; no prereq.) III MTWTh Ar.; IV MTWTh Ar.
- 1w. Choice and Care of Clothing (See 1f)** II MTWTh Ar.; III MTWTh Ar.
- 1s. Choice and Care of Clothing (See 1f)** II MTWTh Ar.
- 20f. Introduction to Related Art.** The development of an appreciation of the art involved in the everyday life of the student. Experiences in making selections in varied fields such as dress, house furnishings, etc., are directed toward a discriminating taste. The arts and crafts of various countries are studied briefly for their contribution toward breadth of view, enjoyment and understanding of other cultures (4 cred.; fr.; not open to Home Economics seniors or to those who have had 56; no prereq.) II MTWF Myren; III MTWF Myren
- 20w. Introduction to Related Art (See 20f)** III MTWTh Esteros; VIII MTWTh Myren
- 20s. Introduction to Related Art (See 20f)** II MTWF Myren
- 30f,s,* Introduction to Nutrition.** A course designed for students wishing a discussion of the application of the principles of nutrition to the selection of food (2 cred.; not open to Home Economics students or to those who have had F.L. 14; no prereq.) III TTh (f); VI TTh (s) Biester, Nymon
- 31f. Introduction to Nutrition.** The application of nutrition principles to food selection of college students. Includes information on the relation of food to the promotion and maintenance of health (3 cred.; fr.; not open to seniors or to students having credit for H.E. 30; no prereq.) III MWF Biester; 9:45-11:00 TTh Nymon; VI MWF Nymon
- 31w. Introduction to Nutrition (See 31f)** II MWF Theis; 9:45-11:00 TTh Theis
- 31s. Introduction to Nutrition (See 31f)** III MWF Theis
- 34s. Nutrition Problems.** A consideration of the nutrition problems most commonly met by adults and children in typical families (4 cred.; 3rd qtr. soph., jr., sr.; prereq. 31, 40, physiol. or hum. biol. Not open to students having credit for H.E. 76 or 170 and 171) II MTWTh Nymon

* Offered on the Minneapolis Campus. Intended for students in Science, Literature, and the Arts. Open to Home Economics students only by special permission of director of School of Home Economics.

40f,w,s. Food Preparation. The development of technique and the application of fundamental science principles to cookery processes and preservation. The establishment of good standards for food products (5 cred.; no prereq. for Science, Literature, and the Arts students) III-IV MTWThF Jones; VI-VII MTWThF Jones; VIII-IX MTWThF Jones

Senior College Courses

- 52f. Introduction to Textiles.** A study of the factors which influence the quality and value of fabrics used in men's and women's wearing apparel and household furnishings. Designed primarily to meet the needs of those interested in merchandising (3 cred.; for S.L.&A., Bus.Ad., U.C., and ArtEd. students; no prereq.) VI-VII MWF Carlson
- 56f. Applications of Color and Design I.** The needs of individual students determine largely the specific content of the course. It is devoted to a general study of color and design applications in various areas, including a consideration of problems relating to dress. Arrangement of display cases is studied through actual experience (3 cred.; not open to Home Economics students or to those who have had H.E. 20; no prereq.) VIII-IX MWF Ludwig
- 57s. Applications of Color and Design II.** A continuation of 56 with the emphasis upon house planning and furnishing problems. Rooms and display cases are arranged. A brief study of some of the arts and crafts of other countries gives a background of appreciation and standards for judging quality (3 cred.; not open to Home Economics students or to those who have had H.E. 24, or H.E. 180; prereq. 56 or 20, or consent of instructor) VII-VIII MWF Ludwig
- 70w. Advanced Food Preparation.** A continuation of Course 40, emphasizing particularly the scientific principles that underlie cookery processes and food preservation (3 cred.; jr., sr.; prereq. 40 and permission of instructor) VI-VIII TTh Gordon
- 76f. Nutrition.** The application of the principles of nutrition to the problems of food selection most commonly met in everyday living (4 cred.; jr., sr.; prereq. 30 or 31, and 40. Not open to students having credit for H.E. 34) IV MTWF Nymon
- 85f,w,s. Home Management Principles.** Study and discussion of managerial aspects of homemaking; work simplification of household activities; financial records and budget-making for individual and family (3 cred.; jr., sr.; prereq. 40, 41 advised) VII MWF Jeary
- 120f,w,s. Art History.** A general view of the history of art from the Egyptian period to the present. The development of painting, sculpture, architecture, furniture and costume is studied in order to understand the influences and the contributions of the past and their significance to contemporary houses, their furnishings and to dress. Field trips (3 cred.; Senior College and grad. students only) VIII MWF Esteros

HOW TO STUDY

See General Studies, page 73.

HUMANITIES

Program chairman—Ralph G. Ross

Major advisers in the College of Science, Literature, and the Arts—For Sequence A: Neil Swanson; for Sequence B: Professor DeWitt.

Two major sequences in the Humanities are offered by the Humanities Division under the general provisions of the interdepartmental (or liberal arts) major which are stated on page 14. The purpose of these divisional majors is to enable the student to obtain a broad acquaintance with the whole humanities field such as would not be possible in a single departmental major.

Sequence A—This major rests upon the general Humanities courses offered in the Department of General Studies, with Senior College electives in the several departments of the Humanities Division. Specifically, these requirements are as follows:

1. Any two full-year general Humanities courses, taken either in Junior or Senior College. Any honor points earned in Junior Col-

- lege sections are not computed in determining the honor points of the major.
2. Nine Senior College credits in History or in the Social Science Division.
 3. Nine Senior College credits in History of Art (see page 33) or History of Music.
 4. Nine Senior College credits in Philosophy.
 5. Eighteen Senior College credits in Literature (English or foreign).
 6. Six Senior College credits in Humanities Proseminar.

Sequence B—This major is distinguished by its emphasis upon foreign language and a concentration in a particular period of culture. The specific requirements are as follows:

1. Two years of Senior College work in one foreign language.
2. A reading knowledge, attainment of which may be determined by examination, of at least one other foreign language.
3. Concentration on one of the four great periods of culture—Ancient, Medieval, Renaissance, or Modern. The courses in literature, history, history of art (see page 33), philosophy, and other expressions of one of these periods are to be chosen so as to complement each other. At least 90 credits are to be taken in the field of concentration, of which at least 60 credits must be in Senior College courses.

For courses labeled "Humanities," see the Department of General Studies page 70. For all other courses in the division, see the separate departments mentioned in the above lists of requirements.

INTERNATIONAL RELATIONS AND AREA STUDIES

Committee chairman—Professor Harold C. Deutsch; **Director**—Associate Professor Charles H. McLaughlin

Major advisers in the College of Science, Literature, and the Arts—

(a) **General International Relations Major**—Professors Jan O. M. Broek, Harold C. Deutsch, and Harold S. Quigley; Associate Professors Werner Levi and Charles H. McLaughlin.

(b) **Area Studies**—Scandinavia: Associate Professor Alrik Gustafson; Western Europe: Professor H. Harvard Arnason; Central Europe: Associate Professor Werner Levi; Russia: Professor Lowry Nelson; East and South Asia: Professor Jan O. M. Broek; Latin America: Professor Emilio C. LeFort.

In addition to these advisers, who are the chairmen of the several area committees, students may consult any other member of a committee whose field of specialization corresponds with the student's field of interest within the program. For committee lists see the special bulletin, *Programs in International Relations and Area Studies*.

(c) **Preparation for the Foreign Service**—Professors Harold S. Quigley and Asher N. Christensen; Associate Professor Charles H. McLaughlin.

Purpose of the programs—In response to increasing student interest in world affairs, several programs in international relations and area studies have been developed which permit students to cross departmental lines. These include:

(a) A general international relations major without particular area emphasis for students who wish to specialize in the governmental and legal as well as the more general aspects of international relations study.

(b) A group of area study majors designed to develop a comprehensive understanding and appreciation of the civilization of the peoples

of given areas. Areas are demarcated on the basis of the culture or civilization of their peoples rather than upon a political basis. Programs may now be arranged for the following areas: Scandinavia, Western Europe, Central Europe, Russia, East and South Asia, Latin America. In each case the major program is an integrated study of the social, political, economic, and esthetic ideas and institutions of the area comprising courses drawn from the social sciences, language and literature, fine arts, humanities, and philosophy.

(c) 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 and one of the area study majors, with the emphasis determined by the student's interests.

For full information about these programs at either the undergraduate or the graduate level consult the special bulletin *Programs in International Relations and Area Studies*. Some of the essential features are indicated below.

Courses in the Junior College—Students may satisfy the group requirements under either Plan I or Plan II, but in either case should complete four quarters, or the equivalent, of a foreign language in college. In the case of area study majors such preparation should be in a foreign language appropriate to the area to be studied. Foreign Service candidates should choose either French, German, Spanish, Portuguese, or Russian. Since Senior College training in foreign language is ordinarily required in international relations majors, and always required in area study majors, students should lay a proper foundation for this in the Junior College.

Since the Senior College majors include courses selected from several social sciences care should be exercised to complete any Junior College courses which 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.

Anthropology 1	Introduction to Anthropology	(5)
Anthropology 2	Introduction to World Ethnology	(5)
Economics 1-2	Business History	(10)
Economics 5	Elements of Statistics	(5)
Economics 6-7	Principles of Economics	(10)
Geography 1	Geography of Physical Resources	(5)
Geography 4	Human Geography	(5)
Geography 41	Geography of Commercial Production	(5)
History 1-2-3	Civilization of the Modern World	(9)
History 17	Modern Economic and Social Problems	(5)
History 20-21-22	American History	(9)
Political Science 1-2-3	American Government and Politics	(9)
Political Science A-B-C	The State and the Modern World	(9)
Political Science 25	World Politics	(3)
Social Science 1-2-3	Introduction to Social Science	(12)
Social Science 11-12-13	International Relations	(9)
Sociology 1	Introduction to Sociology	(5)
Sociology 49	Social Problems	(3)

The Junior College curriculum may be completed with courses which satisfy special interests or needs of the student. He should devote some time whenever possible to basic cultural training in the fine arts, humanities, literature, and philosophy, for which the following courses may be considered:

Art 1-2-3	Introduction to Art	(10)
English 21-22-23	Introduction to Literature	(15)

92 COURSE OFFERINGS AND MAJOR REQUIREMENTS

English 37-38-39	Twentieth-Century Literature	(9)
Humanities 1-2-3-4	Humanities in the Modern World	(20)
Music 31-32-33	Music Literature	(6)
Philosophy 1	Problems of Philosophy	(5)
Philosophy 20	Social Philosophy	(3)
Philosophy 135	Philosophy in Modern Literature	(3)

Students planning to elect an international relations or area study major should consult a major adviser as early as possible, preferably upon entrance into the University.

Courses in the Senior College—In consultation with a major adviser, the student will select courses totaling 45 credits, equivalent to a major and a minor.

In the general international relations major these courses must be chosen from approved offerings distributed among at least three social science departments and must form an integrated plan of study relevant to the student's interests and vocational objectives. Foreign language study is to be continued through at least the basic composition and conversation courses at the Senior College level. Additional courses contributing to the international relations program, or courses suited to other cultural interests of the student, may be elected.

The area study majors must include at least 18 credits in the social sciences and 6 credits in an honors or readings course or proseminar designed to integrate the program, the remainder of the 45 credits being distributed among courses in foreign language and literature and in fine arts, humanities, and philosophy. Students are free to complete their programs in accordance with their 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*.

JAPANESE

Department chairman—To be announced

1f-2w-3s. Beginning Japanese. 1f: Introduction to conversational Japanese using romazi; 2w-3s: Reading of text in Japanese, instruction in writing of characters, use of Chinese-Japanese character dictionary and further conversation (15 cred.; no prereq.) V MTWThF Syro-Boyarsky

51f-52w-53s. Advanced Japanese. Study of grammatical constructions; drill in conversation; advanced reading (9 cred.; jr., sr.; prereq. 3) VIII MWF Syro-Boyarsky

56f-57w-58s. Japanese Composition. (6 cred.; jr., sr.; prereq. 3) II TTh Syro-Boyarsky

61f-62w-63s. Advanced Japanese Reading. Readings in various forms of Japanese writing: newspapers, prose, poetry, and the literary language (9 cred.; jr., sr.; prereq. 51-52-53) Ar. Ar. Syro-Boyarsky

JOURNALISM

School of Journalism

Director—Ralph D. Casey.

Major advisers in the College of Science, Literature, and the Arts—Professors Barnhart, Casey, Charnley, Gerald and Swanson; Associate Professors Emery, Ford, and Kildow; Assistant Professors Seehafer and Wilson; Lecturer Park; Instructors Hage and Jensen.

Adviser for students in other colleges—Professor Casey.

Young men and women planning on careers in the various fields of mass communications enter the School of Journalism to earn a B.A. in journalism degree (degree requirements on page 13). The principal fields

of journalism, some of which overlap or require substantially similar preparation, are: Daily and weekly newspaper reporting, editing, and other editorial work; daily and weekly newspaper circulation, editorial administration, and business management; advertising and promotion; radio and television news work, script and continuity writing, and advertising; press association work; magazine writing, editing, and administration; book editing and publishing; agricultural or home economics journalism; public relations and public opinion; media analysis and mass communications research; journalism teaching.

Preparation for journalism involves three channels: A sound cultural education, a study of the social implications and professional responsibilities of a free press, and a fundamental knowledge of journalistic techniques and procedures. The journalism major student, to get his liberal education—the basic background of the historic, social, economic, and cultural cross-currents which affect his work—is asked to meet the Arts College freshman and sophomore requirements, and to plan a Senior College program, in conference with his adviser, which supports and extends his professional training. Emphasis in this supporting work, though it is always designed to meet individual needs, is largely upon the social studies, the humanities, and literature. About three fourths of the student's total university courses are devoted to work of this kind.

The journalism major begins his journalism work with a course in basic journalistic writing in his sophomore year. To provide himself both with knowledge of communications as social institutions and with the specialized techniques of the forms of journalism in which he is interested, he takes a major sequence "core group" in junior and senior years, together with a number of elective courses. These journalism courses take about half the student's time in the Senior College.

Freshmen who are interested in journalism and communications or who think that they may enter the school at a later time are urged to discuss their course programs and vocational desires with members of the journalism staff.

All prejournalism students must meet the freshman English and public health requirements as described on page 11. All must include Comp. 27-28, Jour. 13, Pol.Sci. 1-2 or 5, and Hist. 21-22 (or Hist. 68-69) in their Junior College programs. All except those planning to enter the journalism major for students specializing in advertising must include also Jour. 14-15. Preadvertising specialists must include Jour. 18.

It is recommended that the prejournalism student meet Junior College requirements (see page 10) whether he elects Plan I or II, so as to include substantial basic work in the following fields:

Social Studies—The required history and political science courses may be supplemented by economics, sociology, and Soc.Sci. 1-2-3.

Natural Science—Nat.Sci. 1-2-3 or 4-5-6 or either psychology, chemistry, physics, biology, or a combination of courses in these fields.

Humanities—French, Spanish, or German; humanities; philosophy; speech; English or American literature.

Students entering journalism major work will be assigned work requiring typing ability. Those who cannot type at a minimum rate of 35 words a minute will be required to enroll concurrently in Econ. 32 (Beginning Typewriting) or Econ. 33 (Intermediate Typewriting). It is recommended that prejournalism students take the necessary typewriting training in high school or otherwise, before entering journalism courses.

Electives to make the required Junior College total of 84 to 90 credits should include courses from the areas listed above, or other areas chosen in consultation with the journalism adviser. An especially recommended course is Econ. 6-7. Other electives recommended as providing, in most

94 COURSE OFFERINGS AND MAJOR REQUIREMENTS

cases, a sound foundation for major work in journalism are: Pol.Sci. A-B, 25; Soc. 1, 2; Psy. 1-2; Hist. 1-2-3, 17; Soc.Sci. 1-2-3; Nat.Sci. 1-2-3, 4-5-6; two or more quarters of Humanities; Geog. 1, 4, 41; Eng. 37-38-39.

No student whose average is lower than C will be permitted to enroll in any journalism course, either Junior College or Senior College.

The 11 o'clock hour Tuesdays and Thursdays is free of journalism classes, to make it easier for journalism major students to attend vocational counseling and other professional meetings occasionally scheduled at this hour by the School of Journalism. Journalism majors are urged to keep these hours free of other classes insofar as possible.

Major sequence in the College of Science, Literature, and the Arts—Courses 51-52, 55, 73, 101, 109-110, 140-141, 142, and 9 additional credits in journalism chosen in conference with the adviser. (*Modified major sequences for students in advertising or management and in agricultural or home economics journalism are described below.*) Students of marked ability may substitute for these 9 additional credits Senior College courses in other departments with the approval of the major adviser in journalism.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major sequence for journalism students with advertising specialization—Courses 51, 55, 65, 73, 86, 94, 104, Psy. 56, B.A. 77 and 87, and 6 hours of electives in journalism, or related social sciences, or other approved areas. Additional Junior College requirements are: Econ. 6-7 and Psy. 1-2.

Minor sequence for such students—A student may meet the minor requirement by a minor sequence of 15 credits or two minors of 9 credits each in Senior College courses in the College of Science, Literature, and the Arts, or by a special 15-credit sequence to be chosen from the following courses: B.A. 51, 53, 68, 69, 112, 180 (C, Marketing), 194, Econ. 84, 85, 110, Psy. 140.

Students wishing special training in commercial design are advised to elect 9- or 15-credit minors from among Art 53, 54, 55, 63, 64, 65.

Major sequence for journalism students with newspaper management specialization—Courses 51, 55, 65, 73, 86, 93, 94, 95, and 142, and 12 additional credits chosen in conference with the adviser from among 78, 101, 104, 109-110, 113, 115, 118, 121, 130-131, 140-141, and 177.

Minor sequence for such students—Courses B.A. 77 and 87 and Psy. 56, and 6 additional credits selected from among Drawing 64, B.A. 69 and 194, Jour. 130 and Psy. 140. Junior College prerequisites are Econ. 6-7 and Psy. 1-2. Prerequisite for B.A. 194 is Econ. 5 or B.A. 70.

Radio-Journalism specialization—Journalism majors with professional interest in radio and television news work, script and continuity writing, advertising, or station administration may elect courses in journalism and speech, in conference with their advisers, to meet elective requirements and minor requirements. Such students usually elect from among Jour. 67, 68, 87, 88, 113, 120, and 130-131, and Speech 65, 66.

A number of courses offered by the School of Journalism, giving special attention to communications and public opinion problems, are of general interest to non-journalism students. Among them are: 90, 111, 112, 113, 115, 120, 121, 130-131, 177, and 205.

Combined curriculum in Journalism and Agriculture—This curriculum is intended for those who wish to prepare for some branch of journalism which relates to agriculture. Students intending to major in agricultural journalism may register in the College of Science, Literature, and the Arts or in the College of Agriculture, Forestry, Home Economics,

and Veterinary Medicine. For the complete curriculum, students should consult advisers in either the School of Journalism or the office of the dean of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine.

Combined curriculum in Journalism and Home Economics—This curriculum prepares students for professional work in areas of newspaper, magazine, advertising, radio, public relations, and other journalistic activity in which proficiency in home economics subject matter is necessary. The curriculum offers a major journalism sequence combined with general home economics background and specialization in selected home economics fields. Its flexibility makes it possible to suit its requirements to the individual needs of each student. Students electing the curriculum register in the College of Science, Literature, and the Arts. They design their programs in consultation with major advisers in both the School of Journalism and the School of Home Economics.

Minor sequence—For students in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine, the Institute of Technology, and the School of Business Administration: Courses 11, 41, 69, and 6 additional credits in Senior College journalism courses, to be chosen in conference with the adviser. Courses 78, 90, 110, 111, 121, and 130 are recommended.

Minor sequence in the College of Education—Courses 11, 41, 69, 82, and 9 additional credits chosen from among Jour. 55, 90, 103, 111, 120, 121, and 130. Course Ed.T. 74 (See *Bulletin of the College of Education*), offered by the School of Journalism, is a required education elective for students in this sequence.

Fees—Students registered for any journalism course are required to pay a general fee of \$1 a quarter, regardless of the number of courses pursued. Courses 10, 41, 51, 52, 55, 58, 59, 66, 67, and 68 require laboratory fees in addition.

Junior College Courses

- 10f,w,s. **Photography.** Fundamentals of photography: the use of cameras, developing, printing and other elementary techniques (the same as Art 10) (3 cred.; soph., jr., sr.; no prereq.) Lect. V T; lab. (for journalism majors only) VI-IX M Liebling
- 11f. **Introduction to Reporting** (for journalism minors in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine, College of Education, Institute of Technology, and the School of Business Administration) (3 cred.; soph., jr., sr., with average of C; prereq. Eng. A-B-C or Comp 4-5-6 or Com. 1-2-3 or Rhet. 1-2-3 or exemption from English requirement) I MWF Park; IV MWF Ford
- 11w. **Introduction to Reporting** (See 11f) II TThS Ford
- 13f. **Introduction to Reporting** (for majors) (3 cred.; soph., jr., sr., with average of C; prereq. English A-B-C or Comp 4-5-6 or Com. 1-2-3 or English exemption, and proof of typewriting skill of 35 net words a minute or concurrent enrolment in Econ. 33 or 32) I-II MWF Hage; III-IV MWF Ar.; VI-VII MWF Ar.; VI-VIII TTh Charnley
- 13w. **Introduction to Reporting** (See 13f) I-II MWF Jensen; III-IV MWF Ar.; VI-VII MWF Park
- 14w,s-15f,s. **Newspaper Reporting** (for majors) (6 cred.; soph., jr., sr.; prereq. for 14, C average in 13 and in all work, or consent of instructor, and Comp. 27-28,* and proof of typewriting skill of 35 net words a minute or concurrent enrolment in Econ. 33; for 15, C average in 13-14 and in all work, or consent of instructor, and Comp. 27-28,* and satisfaction of typewriting requirement) Schedule for 14w: III-IV MWF Ar.; I-II TThS Ar.; VI-VIII TTh Charnley. Schedule for 14s: III-IV MWF Ar.; I-II TThS Park. Schedule for 15f: III-IV MWF Gerald. Schedule for 15s: I-II MWF Ar.; VI-VII MWF Ar.; VI-VIII TTh Charnley

* May be taken at the same time.

96 COURSE OFFERINGS AND MAJOR REQUIREMENTS

18w. Principles of Advertising. Theory, principles, and functions of advertising; its role in the economic, social and marketing structure. Newspapers, magazines, and radio as advertising media (3 cred.; soph., jr., sr.; prereq. 13, C average, and Comp. 27-28*) I TThS Seehafer

18s. Principles of Advertising (See 18w) III TThS Seehafer

41w. Editing for Nonmajors (not open to Science, Literature, and Arts students without permission of the director of School of Journalism) (3 cred.; jr., sr.; prereq. 11 or 13) Lect. IV MW Ford; lab. sections as follows: I-II T Hague; I-II Th Hague; III-IV W Ford; VI-VII F Hague; VIII-IX W Wilson

Senior College Courses

Senior College courses in the School of Journalism are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

51f. News Editing (3 cred.; jr., sr.; prereq. 15, or B average in 13-14, or [for journalism major advertising specialists] 13 and 18) Lect. V T Kildow; lab. sections as follows: I-II TTh Ar.; I-II WF Jensen; III-IV MW Emery; VIII-IX TTh Emery; VI-VII WF Ar.; VIII-IX TTh Ar.

51w. News Editing (See 51f) Lect. V T Swanson; lab. sections as follows: I-II TTh Emery; VI-VII TTh Ar.

51s. News Editing (See 51f) Lect. V T Swanson; lab. sections as follows: I-II TTh Ar.; VIII-IX MW Jensen

52s. News Editing (3 cred.; jr., sr.; prereq. 51 and 55) Lect. V T Kildow; lab sections as follows: III-IV MF Ar.; VI-VII WF Emery; VIII-IX MW Ar.; VI-VII TTh Ar.; VIII-IX TTh Ar.

55f,w,s. Advertising and Newspaper Typography (3 cred.; prereq. for journalism majors, Senior College standing; for others, 11 or 13 and 41) Lect. V Th; lab. sections as follows: I-II MW Wilson (w); I-II TTh Wilson; VI-VII MW Wilson; VIII-IX MW Barnhart

58w. Advanced Typography. Individual projects in advertising composition, newspaper make-up, and booklet planning (2 cred.; jr., sr.; prereq. 55 and consent of instructor) VI-VII TTh Barnhart

59f,s. Typography Workshop. Original experimentation in esthetic and functional factors of typographical design; individual projects in brochures, magazine layout, book design, display printing, etc. (2 cred.; jr., sr.; prereq. 55 and consent of instructor) Ar. Ar. Wilson

65f,s. Graphic Arts: Processes. Letterpress, offset, and gravure printing processes; engravings and copy preparation; significant graphic arts developments (3 cred.; jr., sr.; prereq. consent of major adviser in the School of Journalism or in the School of Business Administration) IV MWF Wilson

66f,w,s. Pictorial Journalism. The analysis, use, and influence of the news picture; technique of the "picture-story"; the picture magazine; picture editing; advertising photography; use of the news camera (3 cred.; jr., sr.; prereq. 10, 13, and consent of instructor) Lect. VIII M Kildow; lab. VIII-IX WF Kildow

67f,w,s. Radio News Writing. The gathering, writing, and editing of news for broadcast; use of recorders; special events; television news; "backgrounding" and commentary in radio news practice. In laboratory, students edit news programs for KUOM (3 cred.; jr., sr.; prereq. 15) Lect. VII WF Charnley (w), Jensen (f,s); lab. III-IV Ar.

68s. Problems in Radio Writing. The radio audience and its responses; planning and writing scripts in dramatics, public affairs, television, and other radio fields; fundamental broadcasting production problems; program-planning (3 cred.; jr., sr.; prereq. for journalism majors, 51 and consent of instructor; for speech-radio majors, 13 and consent of instructor) VI MWF Charnley

69s. Newspaper and Magazine Articles (for minors only). Technique of writing feature articles for newspapers and magazines. Study of markets open to free-lance writers. Analysis of published articles. Writing and submitting articles for publication (3 cred.; jr., sr.; prereq. 41) II TTh and 1 hr. ar. Ford

73f,s. Magazine Writing and Editing. Planning and writing feature articles for general, class, and trade publications; marketing; problems of magazine editing; house organ and industrial journal problems (3 cred.; jr., sr.; prereq. 15 or 18) Schedule for 73f: VI MWF Charnley; VIII MWF Hague. Schedule for 73s: I MWF Kildow; VI MWF Hague

- 74w. Magazine Writing and Editing.** Problems of magazine layout and make-up; book publishing problems. Individual projects in advanced magazine writing and in magazine editing (3 cred.; jr., sr.; prereq. 55, 73 and consent of instructor) V-VI M and 1 hr. ar. Charnley
- 78f. Public Relations.** Theories and techniques of the public relations function; the public relations counsel and publicity expert; study and production of public relation programs and campaigns for industry, social agencies, government (3 cred.; sr.; prereq. 51, 55, and 73, or 41, 55, and 69) I MWF Emery
- 82s. Supervision of School Publications.** For those who plan to become advisers of high school or college newspapers, yearbooks, magazines. Course emphasis is upon editorial content, staff organization, editing, typography, make-up and business management of such publications (3 cred.; jr., sr.; prereq. 41 or 51) VII MWF Kildow
- 86f,w,s. Advertising Copy Writing.** Advertising media; advertising appeals; techniques of writing advertising copy for newspapers, magazines, direct mail, posters, brochures; planning advertising campaigns (3 cred.; jr., sr.; prereq. 51 or 41, and 55 and 65) VII MWF Seehafer; (fall only) III TThS Seehafer
- 87w. Radio Advertising.** The relation of radio advertising to the sponsor, and the station, the network, and the station representative; program selection, time buying, program ratings. Preparation and presentation of radio advertising copy (3 cred.; sr.; prereq. 18, 120, and consent of instructor or 69 and B.A. 88 and consent of instructor) III MWF Seehafer
- 88w. Radio and Television Station Administration.** The broadcasting station in community life. Administrative problems in programming, traffic, time sales, management. FCC and other regulations affecting station operation. Problems in license application, public service programming, etc. (3 cred.; jr., sr.; prereq. 120 or consent of instructor) I MWF Paulu
- 90s. Mass Communications and the News.** How the news gets to, and affects, the public—in print, on the air, by film. Evaluation of news gathering and presentation methods. Contemporary influences on communications media. Studies of individual newspapers, columnists, commentators (3 cred.; jr., sr.; not open to journalism majors) III MWF Charnley
- 93f. Weekly Editorial Administration.** News and editorial problems of the small-town weekly newspaper. Local and trade-area news, news departments, features, payroll, and other news and editorial costs. News and editorial responsibility (3 cred.; jr., sr.; prereq. 51 or concurrent registration in 51) II TThS Barnhart
- 94w. Newspaper Advertising.** The role of newspaper advertising; the newspaper's relations with the retail advertiser, national representative, and advertising agency; organization of advertising departments; rate structure; services. Retail advertising copy. Enrollment of nonmajors is sharply limited (3 cred.; jr., sr.; prereq. 51 and 55, or 41, 55 and consent of instructor) II TTh and 1 hr. ar. Barnhart
- 94s. Newspaper Advertising (See 94w)** III TTh and 1 hr. ar. Gerald
- 95s. Circulation and Newspaper Management.** The over-all management problem, including advertising, circulation, and commercial printing as sources of income; book-keeping and cost accounting; plant layout and inventories; operating expenses; business policies (3 cred.; jr., sr.; prereq. 51) II TThS Barnhart
- 101w. The Reporting of Public Affairs.** Reporting court trials, city, county, state, federal, administrative and legislative agencies, politics, business, and labor. Students attend and report trials, hearings, legislative sessions and press conferences (3 cred.; sr., grad.; prereq. 51) III TThS Hage, Ar.
- 101s. The Reporting of Public Affairs (See 101w)** III MWF Hage
- 103s. Literary Aspects of Journalism.** The literary, creative aspects of journalism as exemplified in the works of English and American fiction writers, poets, critics, essayists, and humorists. Lectures, discussions, and weekly papers (3 cred.; jr., sr., grad.; prereq. consent of instructor) IV MWF Ford
- 104f,s. Advanced Newspaper Advertising.** Advanced work in copy testing methods; sales programs and newspaper sales promotion; advertising salesmanship (3 cred.; jr., sr., grad.; prereq. 51, 94, and consent of instructor) II MWF Barnhart
- 106f,s. Critical Writing.** The theory and practice of writing book, theater, and motion picture reviews. Analysis of the work of leading critics and critical periodicals. Weekly reviews are written (3 cred.; jr., sr., grad.; prereq. a Senior College writing course and consent of instructor) II TThS Ford (f), Gray (s)
- 109w-110s. History of Journalism.** 109w: Development of newspapers and periodicals from early beginnings in Europe through the 1860's in the United States. 110s: The emergence of modern journalism in the post-Civil War period (6 cred.; jr., sr., grad.) II MWF Ford, Emery

98 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 111f. International Communications and Foreign Affairs.** Development, use and regulation of international communications facilities; effects of their use on diplomatic, business and cultural relations in war and peace. Gathering and dissemination of news throughout the world; problems of freedom of information (3 cred.; jr., sr., grad.; prereq. 51 and course in international relations, or consent of instructor) IV MWF Park
- 112w. Comparative Foreign Journalism.** The press in the principal foreign countries. Similarities and differences among the press systems; cultural, technological, and economic bases for differences. Comparison and contrast with the newspapers of the United States (3 cred.; jr., sr., grad.; prereq. 111 or consent of instructor) II MWF Park
- 113t. Mass Communications.** The problems of communicating information and ideas to group and mass audiences by newspaper, radio, film, television, books, and other media. Comparative studies of content comprehension and influence (3 cred.; sr., grad.; prereq. journalism major or consent of instructor) I MWF Swanson
- 115w. Communication Media Analysis.** Methods for analyzing the content and reader- or listenership of newspapers, periodicals, radio broadcasts, and motion pictures. Attitude studies and reading tests involving these media (3 cred.; jr., sr., grad.; prereq. 51 and consent of instructor, or Econ. 5 or Psy. 70 or equivalent and consent of instructor) VI MWF Swanson
- 115s. Communication Media Analysis** (See 115w) III MWF Jones
- 118. Selected Topics in Journalism** (3 cred.; sr., grad.)
As. **Advanced Reporting of Public Affairs** (Prereq. 101 and consent of instructor) VI-IX MW Ar.
Bs. **Projects in Media Analysis** (Prereq. 115 and consent of instructor) VIII-IX TF Swanson
Cf,w,s. **Selected Readings in Journalism** (Prereq. journalism majors with B average and consent of instructor) Ar. Ar. Casey
- 120f. Development of Radio Communications.** Historical and economic development of aural broadcasting, television and facsimile; government regulation; radio and the press; radio as a social factor; broadcasting in other countries (3 cred.; jr., sr., grad.; prereq. 15 for journalism majors, 13 or consent of instructor for speech-radio majors) II MWF Charnley
- 121w. The Press in a Dynamic Society.** The political and economic environment of the newspaper, past and present. Industrialization, urbanization, and other social trends as they affect the newspaper. Patterns of newspaper ownership—private, cooperative, and subsidized. The future newspaper (3 cred.; jr., sr., grad.; prereq. 15 or 18 or consent of instructor) IV MWF Gerald
- 130f-131w. Communication Agencies, Propaganda, and Public Opinion.** Theories of public opinion formation and propaganda; propaganda techniques of governments, political parties, pressure groups, etc. Democratic and authoritarian methods of opinion control. Ideological campaigns and psychological warfare (6 cred.; jr., sr., grad.; prereq. for 130, 15 cred. in the social studies; for 131, 130) III MWF Casey
- 140f-141w. Interpretation of Contemporary Affairs.** Analysis of major political, economic, and social developments and their interpretation in the editorial, interpretative article, and commentary (6 cred.; sr., grad.; prereq. for 140, 51 and 15 cred. in the social studies; for 141, 140) Lect. VI TTh Staff; rec. VII T Staff
- 142s. Current Communications Problems.** The individual project method is used for analyses of communications problems of current importance in the light of their social, economic, and technological environment. The course is conducted in small seminar-like groups (3 cred.; sr., grad.; prereq. 51) VI-VII TTh Staff
- 150s. Public Relations in Community Services.** Principles and practices of public relations and educational campaigns in public health, social work, and other community service fields (2 cred.; sr., grad.; prereq. consent of major adviser and instructor; not open to those who have had Jour. 78, nor ordinarily to journalism majors) VIII-IX Th Emery
- 177s. Freedom of the Press and Communications Law.** Freedom of speech and press, its development under the Constitution, and the areas of tension today. Municipal, state, and federal regulations affecting news gathering and news dissemination. The problems of international freedom of press and radio (3 cred.; jr., sr., grad.; prereq. 51 or consent of instructor) IV MWF Gerald

For Graduate Students Only

- 205s.** **Topics in International News Communications** (3 cred.; seminar for grad. students; prereq. consent of director of the school) Ar. Ar. Casey, Park
- 208w.** **Communications Agencies as Social Institutions.** Influence of political, social, and economic forces upon the national character and performance of press, radio, and other mass media, and the examination and evaluation of their responsibility for social leadership (3 cred.; grad.; prereq. consent of adviser) Ar. Ar. Gerald
- 210f.** **Research in Mass Communications Problems** (2 or 3 cred.; seminar course for grad. students; prereq. consent of director of the school) Ar. Ar. Swanson

LATIN

See Classics, page 53.

LIBRARY INSTRUCTION**Director**—E. W. McDiarmid**Major advisers**—Professor McDiarmid; Associate Professors Shove and Hayner.

The College of Science, Literature, and the Arts offers two programs for students who are interested in preparing for librarianship as a career:

1. A program leading to the degree of bachelor of science in library science at the completion, normally, of five academic years of college study.
2. A program leading to the degree of bachelor of science with a major in library science at the completion of four academic years of college study.

For either course the student must complete the requirements for admission to the Senior College, given on pages 10-12 and is subject to all the regulations which govern the work of other Arts students. He must present and maintain during his Library Science program a scholarship average of C.

For further information concerning these programs, one should consult the special *Bulletin of the Division of Library Instruction*.

Junior College Courses

1f,w,s. Use of Books and Libraries. Study of reference material for personal study and research (3 cred.; fr., soph. only; no prereq.) II MWF; VII MWF

Senior College Courses

- 50f. Libraries and Society.** History and types of libraries, agencies and services; libraries in the modern world; librarianship as a profession (3 cred.; no prereq.) IV MWF Shove
- 53w. School Library Management.** Primarily for students without previous experience in a school library (3 cred.; no prereq.) VI MWF Hayner
- 60f. Sources of Information about Library Materials.** Reviewing media, "best" lists, trade bibliographies, etc. Principles of book selection and order work (3 cred.; no prereq.) III MWF Methven
- 61f,w,s. Library Practice** (3 cred.; prereq. 18 cred. in lib. sci. or satisfactory library experience) Ar. Ar. Hayner, Shove
- 62f. Reference I.** General reference tools and other sources of information in reference work; theory and practice of reference work (2 cred.; no prereq.) III TTh Russell
- 63w. Reference II.** Reference work in subject fields; the reference department; practical bibliography (3 cred.; prereq. 62) IV MWF Shove
- 70w. Reading Guidance.** The library user, his personality and background; the matching of book and user and the improvement of reading habits (3 cred.; no prereq.) I MWF Methven

100 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 74f. **Library Materials in the School's Instructional Program** (2 cred.; no prereq.) II TTh Hayner
- 79s. **Medical Reference Work.** Reference books and technical methods for hospital staffs (3 cred.) I MWF Kingsley
- 81f. **Bibliographical Description of Library Materials.** The description of books and other materials in bibliographies and library catalogs (3 cred.; no prereq.) II MWF Simonton
- 82w. **Subject Organization of Library Materials.** The structure of subject bibliographies, library classification, and subject headings (3 cred.; no prereq.) II MWF Simonton
- 85w,s. **Special Problems.** Individual study on library problems for advanced students in Library Science (1 to 3 cred.; prereq. approval of director, Division of Library Instruction) Ar. Ar. McDiarmid, Shove, Hayner
- 151f. **Invention and Spread of Printing.** History of the development of printing and its spread to the end of the sixteenth century (2 cred.; no prereq.) Ar. Ar. Shove
- 152w. **History of Printing to Modern Times.** The development and spread of printing and the publishing industry, 1600-1900 (2 cred.; no prereq.) Ar. Ar. Shove
- 154s. **Principles of Public Library Administration.** Theories and principles of administration of the public library (3 cred.; prereq. consent of instructor) I MWF Methven
- 155s. **Administrative Problems in the College and University Library.** Educational functions of the college and university library and administrative organization to perform these functions (3 cred.; prereq. consent of instructor) I MWF Shove
- 157s. **School Library Problems.** Service in large units, relationships with public libraries, planning library quarters, budgets, training for school librarianship (3 cred.; prereq. consent of instructor) II MWF Hayner
- 164s. **Reference III.** Specialized reference tools; government publications; administration of the reference department; special problems in large libraries (2 cred.; prereq. 62, 63) I TTh Russell
- 165w. **Advanced Bibliography.** Specialized trade and national bibliographies, domestic and foreign (2 cred.; no prereq.) III TTh Shove
- 171w. **Principles and Problems in Reading Guidance for Children.** Factors affecting the reading interests and needs of children, and principles of guidance in children's literature (3 cred.; prereq. 70) III MWF Hayner
- 172s. **Principles and Problems in Reading Guidance for Adolescents.** The reading interests and needs of the adolescent and guidance in the use of library material for adolescent needs (3 cred.; prereq. 70) III MWF Hayner
- 173s. **Principles and Problems in Adult Reading Guidance.** Adult reading interests and factors affecting adult use of library material (3 cred.; prereq. 70) II MWF Methven
- 184s. **Advanced Cataloging.** Special problems of cataloging and classification, particularly in college, university and other large libraries (3 cred.; prereq. 81, 82) III MWF Simonton

LINGUISTICS AND COMPARATIVE PHILOLOGY

Department chairman—To be announced

Major adviser in the College of Science, Literature, and the Arts—To be announced.

Major sequence in the College of Science, Literature, and the Arts—Courses Classics 106-107, Anth. 105 or Classics 108, and at least 18 additional credits in courses listed below, chosen after consultation with adviser. All candidates are expected to have a fair knowledge of Latin.

GENERAL COURSES

- Anth.105. Elements of Language.* (3 cred.; jr., sr., grad.; no prereq.) (*Not offered*)
- Clas.106f-107w. Introduction to the Study of Language* (3 cred. per qtr.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language) VIII MWF Swanson
- Clas.108s. Cultural Aspects of Language* (3 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language) VIII MWF Swanson
- Anth.109f. General Linguistics* (4 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language) II MWF and VIII-IX T Spencer

CELTIC

Ling.134-135-136. Introduction to Celtic Philology: Old Irish Phonology, Morphology, and Text Interpretation (9 cred.; sr. with consent of instructor, grad.; prereq. at least two Senior College courses in early Indo-European languages, preferably Ling. 131-132 or German 113-114) (*Not offered in 1951-52*)

CLASSICS

Lat.133s. Vulgar Latin (3 cred.; jr., sr., grad.; open to advanced students of Latin or a Romance language with the consent of the instructor) III MWF Swanson

Lat.242. Historical Latin Grammar (3 cred.) (*Not offered in 1951-52*)

ENGLISH

Eng.100f,s. Old English (Anglo Saxon) (4 cred.; jr., sr., grad.; prereq. 6 cred. in Eng. lit. exclusive of A-B-C and Classics 24, 31, 32, 43) I MTWF Clark (f), II MTWF Armstrong (s)

Eng.102w. Readings in Old English Prose and Verse (3 cred.; jr., sr., grad.; prereq. 100) I MWF Armstrong

Eng.103s. Beowulf (3 cred.; jr., sr., grad.; prereq. 100) I MWF Armstrong

Eng.165f,w. Introduction to Modern English (3 cred.; jr., sr., grad.; prereq. 6 cred. in Eng. lit. exclusive of A-B-C and Classics 24, 32, 33, 43) VI MWF Allen

Eng.166s. Historical Backgrounds of Modern English (3 cred.; jr., sr., grad.; prereq. 165) VI MWF Allen

Eng.174s. American English (3 cred.; jr., sr., grad.; prereq. 6 cred. in Eng. lit., including language, above A-B-C) VII MWF Allen

Eng.204f-205w-206s. The Rise and Development of Standard English (9 cred.; sr. with consent of department, grad; prereq. 100 or equiv. but 100 may be taken concurrently with 204; students may enter 205 but not 206) VII-VIII T and VII Th Allen

FRENCH

Fr.171f-172w-173s.† History of French Language (3 cred.; jr., sr., grad.; prereq. one year of Latin or permission of instructor) Ar. Ar. Brackney

Fr.201f-202w-203s. Old French Phonology and Morphology (6 cred.; grad.) Ar. Ar. Brackney

Fr.204f-205w-206s. Reading in Old French Literature (6 cred.; grad.) Ar. Ar. Brackney

GERMAN

Ger.110-111-112.† Middle High German. (9 cred.; sr., grad.; prereq. 70 and 11 cred. above 59) (*Not offered*)

Ger.113f-114w. Gothic (6 cred.; sr. with completed major sequence, grad.; prereq. 80 and 11 cred. above 59) VIII-IX W Downs

Ger.125. History of the German Language (3 cred.; sr., grad.; prereq. 80 and 11 cred. above 59) (*Not offered in 1951-52*)

Ger.126. Historical German Grammar (3 cred.; sr., grad.; prereq. 110-111-112 or 113-114) (*Not offered in 1951-52*)

Ger.176-177. Problems and Research Trends in Germanic Philology (6 cred.; sr., grad.; prereq. at least two medieval Germanic dialects) (*Not offered in 1951-52*)

Ger.194s. Old Saxon (3 cred.; sr., grad.; prereq. German 113) VIII-IX W Downs

SANSKRIT

Ling.128f-129w-130s. Readings in Sanskrit. Descriptive grammar; interpretation of Vedic and Classical Sanskrit texts (9 cred.; sr. with consent of instructor, grad.; prereq. at least two Senior College courses in early European languages) Ar. Ar. Magner

Ling.131-132. Introduction to Sanskrit. Phonology and morphology from comparative viewpoint (6 cred.; sr. with consent of the instructor, grad.; prereq. at least two Senior College courses in early Indo-European languages, preferably Greek, Gothic, or Latin) (*Not offered in 1951-52*)

SCANDINAVIAN

Scand.185. History of the Scandinavian Languages (3 cred.; sr., grad.; prereq. 4-5-6 or 10-11-12 or consent of instructor) (*Not offered in 1951-52*)

Scand.195. Introduction to Old Norse (4 cred.; sr., grad.; prereq. German 113 or permission of the instructor) (*Not offered in 1951-52*)

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

SEMITIC

- Ling.121f-122w-123s.** *Introduction to Arabic Grammar and Reading* (9 cred.; jr., sr., grad.; prereq. two courses above 50 in any foreign language) Ar. Ar. Irving
Ling.124-125-126. *Introduction to Biblical Hebrew* (9 cred.; jr., sr., grad.; no prereq. but this course cannot be used to satisfy language requirements) (Not offered in 1951-52)

SLAVIC

- Ling.113f-114w-115s.** *Old Church Slavic (Old Bulgarian).* An introduction to Slavic linguistics (9 cred.; prereq. Ling. 131-132 or equiv.) Ar. Ar. Magner
Russ.125f-126w-127s. *History of the Russian Language* (9 cred.; prereq. Russian 51-52-53 or equiv.) Ar. Ar. Magner

SPANISH

- Span.241-242-243.** *Old Spanish Philology* (6 cred.; grad.) (Not offered. Offered in 1952-53)

MARRIAGE

See General Studies, page 70.

MATHEMATICS

Department chairman—Raymond W. Brink

Major advisers in the College of Science, Literature, and the Arts—Professors Brink, Hart, Cameron; Associate Professors Gibbens and Olmsted; Assistant Professors Kalisch and Loud.

Major sequence in the College of Science, Literature, and the Arts—Courses 50, 51 (or 50a, 51a), 62, and 5 credits in either 52 or 107-108; and either 15 additional credits in Senior College courses, other than 70, or 6 additional credits in Senior College courses, other than 70, together with 10 credits of Phys. 101-103-105.

(Prerequisites: Math. 6, 7, 30 or 15, 16, 30.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

All students majoring in Mathematics who have not studied a foreign language are urged to study French or German. Students who plan to pursue graduate study in Mathematics should refer to the section on "language requirements" in the *Bulletin of the Graduate School*.

Major adviser in the College of Education—Professor Hart.

Requirements for a teacher's certificate—Major recommendation: entrance credit in solid geometry or its equivalent; Courses 50, 51 (or 50a, 51a), and 8 additional credits in courses numbered above 51.

Minor recommendation: entrance credit in solid geometry or its equivalent; Course 50 (or 50a) and 3 additional credits in courses numbered above 50.

Math. 20 is strongly recommended as an elective, to be taken preferably in the freshman or sophomore year, in connection with either a major or minor recommendation.

Placement tests—In each of Courses 1, 6, 7, 8, and 15 a placement test will be given at some time within the first two weeks of the quarter. Any student who fails in the test in Course 1 may be required to drop the course and to review elementary mathematics before taking college mathematics. Any student who offers high school higher algebra as a substitute for Course 1 and who fails the placement test given in Course 6, 8, or 15 will be required to take Course 1 before taking more advanced mathematics. A student who has had a substantial course in higher algebra in high school should be able to pass the placement test in Course 6, 8, or 15.

Prerequisites for any course in mathematics may be waived if a petition for registration in the course is approved by the department chairman.

Junior College Courses

1f.* Higher Algebra. Essentially the equivalent of the second year of high school algebra; included are: factoring, fractions, linear equations and systems in one or more unknowns, graphing, exponents, radicals, quadratic equations (5 cred.; prereq. one year of elementary algebra); open for credit to any student offering not more than one-half year of high school higher algebra for entrance and to other students who obtain permission from the department) I MTWThF; III MTWThF; V MTWThF; VI MTWThF

In choosing a section of the above course the student should be guided by the schedule of hours for its winter quarter continuation. The fall-winter sequences are: At I hour, 1f-8w, and 1f-15w; at III hour, 1f-6w; at V hour, 1f-15w; at VI hour, 1f-6w

1w.* Higher Algebra (See 1f) I MTWThF; V MTWThF; VI MTWThF

1s.* Higher Algebra (See 1f) I MTWThF; V MTWThF

6f.§ Trigonometry. Includes: definitions and properties of trigonometric and inverse trigonometric functions, logarithms, solution of triangles with applications, radian measure, functions of two angles, double angles, etc., identities, trigonometric equations (5 cred.; prereq. plane geometry and Course 1 or high school higher algebra); open for credit even to students offering high school trigonometry for entrance) II MTWThF; VII MTWThF

6w.§ Trigonometry (See 6f) III MTWThF; VI MTWThF

6s.§ Trigonometry (See 6f) I MTWThF; V MTWThF; VI MTWThF

7f.|| College Algebra. The standard course emphasizing logical aspects. Includes: Systems of quadratic equations, ratio, proportion, variation, progressions, permutations, combinations, probability, binomial theorem, mathematical induction, inequalities, complex numbers, theory of equations, determinants and applications (5 cred.; prereq. 6, or high school trigonometry if approved by the department chairman following the placement test) II MTWThF; VI MTWThF

7w.|| College Algebra (See 7f) II MTWThF; VII MTWThF

7s.|| College Algebra (See 7f) III MTWThF; VI MTWThF

8f.*§|| Commerce Algebra. College algebra including logarithms. College algebra for business students. Differs from 7 in its lower prerequisite and in including logarithms and other computational topics and in omitting determinants and certain other topics of logical interest (5 cred.; primarily for prebusiness students* but open also to others; prereq. 1, or high school higher algebra) IV MTWThF

8w.*§|| Commerce Algebra (See 8f) I MTWThF

8s.*§|| Commerce Algebra (See 8f) V MTWThF

15f-16w.§|| Elementary Mathematical Analysis. A course for premedical and other students who desire a survey of college mathematics including trigonometry, algebra, and calculus with emphasis on fundamental ideas rather than on technical preparation for more advanced courses in mathematics (10 cred.; prereq. plane geometry and Course 1 or high school higher algebra) III MTWThF; V MTWThF

15w-16s.§|| Elementary Mathematical Analysis (See 15f-16w) I MTWThF; V MTWThF

20w.* Mathematics of Investment. Simple interest and simple discount, compound interest, annuities with simple data, extinction of debts by periodic installments, bonds, depreciation, perpetuities, capitalization, general annuity formulas (5 cred.; prereq. 8, or 6 and 7, or 15 and 16) IV MTWThF; VII MTWThF

20s. Mathematics of Investment (See 20w) I MTWThF

21. Introduction to the Mathematics of Life Insurance. Probability, mortality tables; actuarial notation and computation of net premiums for pure endowments, various types of contingent annuities and life insurance policies; policy reserves (3 cred.; prereq. 20) (Not offered in 1951-52)

* Prebusiness students who elect mathematics to meet the requirement of 10 credits in mathematics or laboratory science should take 1 and 8 if they have not had high school higher algebra, and 8 and 20 if they have had high school higher algebra.

§ Read the announcement about placement tests which precedes the heading, Junior College Courses.

¶ No student may receive credit for more than one of the three Courses 7, 8, and 15. If a student has taken Course 6 and wants more mathematics, he should take Course 7; if he has taken Course 15-16 and wants more mathematics, he should consult the chairman of the department, Room 119 Folwell Hall.

104 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 30f. **Analytic Geometry.** A study of geometry by means of algebra. Topics included: Cartesian and polar coordinates, straight lines, circles, conic sections, loci of given equations, equations of given loci, solid analytic geometry (5 cred.; prereq. 6 and 7 or 6 and 8, or 15 and 16) IV MTWThF
- 30w. **Analytic Geometry** (See 30f) II MTWThF; VI MTWThF
- 30s. **Analytic Geometry** (See 30f) II MTWThF; VII MTWThF
- 49f. **Analytic Geometry and Calculus I.** This course and Courses 50a and 51a constitute a year's sequence including in more integrated form essentially the same topics as Courses 30, 50, and 51. No student may receive credit in both Courses 49, 50a, 51a and 30, 50, 51 except by permission of department. Students who have taken Course 49 and wish to take more mathematics should continue with Course 50a-51a. As prerequisites for other courses in mathematics, Course 49-50a-51a may be substituted for Course 30, 50, 51 (5 cred.; prereq. 6 and 7, or 6 and 8, or 15 and 16) I MTWThF Ar.
- G.E.70f,w,s. **The Slide Rule** (1 cred.; prereq. 6 or 8, or 15 and 16) (For the schedule of hours and days see General Engineering 70 in the *Bulletin of the Institute of Technology*)

Senior College Courses

Courses 50, 51 (or 50a, 51a), 52 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Course 107 is open to Junior College students who have met the prerequisites as printed below. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 50f. **Calculus I: Differential Calculus.** Included: Derivatives and differentials of elementary functions; curve tracing; definitions of velocity, acceleration, curvature, etc.; maxima and minima; related rates; mean value theorems; indeterminate forms; infinite series, expansions of functions (5 cred.; jr., sr.; prereq. 30) III MTWThF; VI MTWThF
- 50w. **Calculus I** (See 50f) IV MTWThF
- 50s. **Calculus I** (See 50f) II MTWThF; VI MTWThF
- 50aw. **Analytic Geometry and Calculus II.** (See 49f) (5 cred.; jr., sr.; prereq. 49) I MTWThF
- 51f. **Calculus II. Integral Calculus.** Includes: Formal integration; geometrical and physical meaning of constants of integration; definite integrals; fundamental theorem of integral calculus; approximate integration; geometrical and physical applications; improper integrals; multiple integrals (5 cred.; jr., sr.; prereq. 50) I MTWThF
- 51w. **Calculus II.** (See 51f) III MTWThF; VI MTWThF
- 51s. **Calculus II** (See 51f) IV MTWThF
- 51as. **Analytic Geometry and Calculus III** (See 49f) (5 cred.; jr., sr.; prereq. 50a) I MTWThF
- 52f. **Intermediate Calculus.** Topics in calculus not adequately treated in 50 and 51. Includes an increased emphasis on theoretical aspects, an introduction to ordinary differential equations, and to partial differentiation and multiple integration (5 cred.; jr., sr.; prereq. 51) V MTWThF Nering
- 52w. **Intermediate Calculus** (See 52f) I MTWThF Carlson
- 52s. **Intermediate Calculus** (See 52f) III MTWThF; VI MTWThF
- 60f. **Synthetic Metric Geometry.** A course in Euclidean geometry including ruler and compass constructions and theorems on the triangle and circle not studied in a high school course in plane geometry (3 cred.; jr., sr.; prereq. 30) VI MWF Gibbens
- 62w. **Introduction to the Theory of Equations.** A study of complex numbers, solution of algebraic equations, properties of polynomials; isolation of the real zeros of a real polynomial; determinants and linear equations (3 cred.; jr., sr.; prereq. 50 or registration in 50 and consent of instructor) VI MWF Gibbens
70. *History of Elementary Mathematics* (3 cred.; jr., sr.; prereq. 30) (*Not offered*)
- 102-103. *Advanced Analytical Geometry* (6 cred.; jr., sr., grad.; prereq. 51) (*Not offered*)
- 106f. **Differential Equations.** A problem course; methods for solving ordinary differential equations of various types with the necessary theory for developing these methods (3 cred.; jr., sr., grad.; prereq. 51) III TThS Gelbaum
- 106w. **Differential Equations** (See 106f) II MWF Hatfield

- 107w-108s. Advanced Calculus.** A study in detail of some topics in calculus; partial differentiation; multiple integrals and change of variable; basic ideas and applications of vectors. Line and surface integrals; Stokes' and Green's theorems; exact differentials; Beta and Gamma functions (6 cred.; jr., sr., grad.; prereq. 52, or 50 and 51 taken with A grades in this college, and either some acquaintance with solid analytic geometry or consent of instructor) V MWF Loud
- 109. Theory of Numbers.** Elementary properties of integers; prime and composite numbers; Euclid's algorithm; congruences; the theorems of Fermat and Wilson; primitive roots; indices; Galois imaginaries; finite algebras; Pythagorean and Heronian triangles; Diophantine equations (3 cred.; jr., sr., grad.; prereq. 51) (*Not offered in 1951-52*)
- 110f,w,s. A Tutorial Course in Advanced Mathematics.** Qualified students whose needs are not met by courses offered may make special arrangements for obtaining, through reading and conferences, the content of other graduate courses regularly offered by the department (3 to 6 cred.; jr., sr., grad.; prereq. 51) Ar. Ar. Ar.
- 115-116. Differential Geometry** (6 cred.; jr., sr., grad.; prereq. 136) (*Not offered in 1951-52*)
- 118f. Vector Analysis.** The algebra of vectors; scalar product; vector product; triple products. Elements of the differential and integral calculus of vectors; space curves; gradient; divergence; curl; Stokes' and the divergence theorems (3 cred.; jr., sr., grad.; prereq. 51) III MWF Loud
- 119w-120s. Matrices and Groups.** 119: Matrices as linear transformations. Rank of a matrix. Orthogonal and symmetric, unitary, and hermitian matrices. Equivalence relations between matrices, canonical forms; characteristic values and characteristic vectors; 120: Elementary theory of finite groups and of infinite abelian groups with some application to permutation and crystallographic groups; representation by matrices, characters (6 cred.; jr., sr., grad.; prereq. 51) III MWF Nering
- 121f-122w-123s. Mathematical Theory of Statistics.** The method of least squares; simple, multiple, and partial correlation; normal, binomial, and Bernoulli distributions, and related parts of theory of probability; introduction to sampling theory, tests of significance (9 cred.; jr., sr., grad.; prereq. 51) IV MWF Hart
- 125. Theory of Geometrical Constructions.** Constructions with and without classical restrictions to rulers and compasses; famous geometrical problems of antiquity, with ancient and modern solutions; constructions by graded rulers, parallel rulers, squares, compasses alone, etc. (3 cred.; jr., sr., grad.; prereq. 30) (*Not offered in 1951-52*)
- 136f. Solid Analytic Geometry.** Algebraic treatment of planes and lines; direction cosines; systems of planes. Cylinders; surfaces of revolution. Quadric surfaces; tangent planes, ruled surfaces. Coordinate transformations, invariants. General equation of the second degree (3 cred.; jr., sr., grad.; prereq. 50 or registration in 50) II MWF Carlson
- 137. Advanced Theory of Equations.** Symmetric functions, resultants, indeterminate equations, reciprocal equations and the construction of regular polygons (3 cred.; jr., sr., grad.; prereq. 51, 62) (*Not offered in 1951-52*)
- 140s. Projective Geometry.** A study of the geometry of points, straight lines, and conics by methods mostly synthetic and nonmetric, based on central projection; theorems of Desargues, Pascal, and Brianchon, with applications (3 cred.; jr., sr., grad.; prereq. 51 or consent of instructor) VI MWF Carlson
- 142. Theory of Invariants** (3 cred.; jr., sr., grad.; prereq. 131 or 137) (*Not offered in 1951-52*)
- 144f-145w-146s. Fourier Series and Orthogonal Functions.** The general theory of orthonormal functions is developed and applied to Fourier, Legendre, Bessel, Hermite, and other series. Convergence and summability theorems are proved, and the Fourier integral is considered (9 cred.; jr., sr., grad.; prereq. 51) IV TThS Cameron
- 149. Introduction to Group Theory** (3 cred.; jr., sr., grad.; prereq. 51, 62) (*Not offered in 1951-52*)
- 157f-158w-159s. Methods of Applied Mathematics.** An integrated study of analytic tools commonly used in applications of mathematics, with many problems and an emphasis on developing the student's technique. Material will include topics from complex variables, matrices, ordinary and partial differential equations, calculus of variations, asymptotic expansions, etc. (9 cred.; jr., sr., grad.; prereq. Intermediate Calculus or consent of instructor) II TThS Donsker
- 170-171-172. Introduction to Modern Algebra.** Definitions and elementary theory of groups, rings and fields; factorization in integral domains; polynomial domains; finite and infinite field extensions; real fields (9 cred.; jr., sr., grad.; prereq. 51 or consent of instructor) (*Not offered in 1951-52*)

- 176s. Intermediate Differential Equations.** Topics in differential equations not contained in a first course but not requiring a broad background of analysis. Emphasis on linear equations of second order of interest in physics. Normal form, adjoint equations, series solutions, equations of Fuchsian type, hypergeometric, Bessel and Legendre equations (3 cred.; jr., sr., grad.; prereq. 106) II MWF Hatfield
- 187. Non-Euclidean Geometry.** The foundation of Euclidean geometry. Euclid's fifth postulate and its implications. Hyperbolic plane geometry and trigonometry. Elliptic plane geometry and trigonometry. The consistency of the non-Euclidean geometry. The elements of inversion (3 cred.; jr., sr., grad.; prereq. 51) (*Not offered in 1951-52*)

For Graduate Students Only

- 200. Galois Theory.** Transcendental and algebraic field extensions. Automorphism groups of fields. Solvability of algebraic equations by radicals (3 cred.; grad.; prereq. 119-120 or 170-171-172) (*Not offered*)
- 201. Valuation Theory.** Definition of valuations; valuations of rational numbers; complete fields; Hensel's Lemma; valuation of field extensions (3 cred.; grad.; prereq. 200 or consent of instructor) (*Not offered*)
- 202. Linear Algebras.** The structure of finite dimensional linear algebras over arbitrary fields; the radical, semi-simplicity, simplicity, division algebras, Wedderburn's structure theorems (3 cred.; grad.; prereq. 201 or consent of instructor) (*Not offered*)
- 203f-204w-205s. Advanced Topics in Mathematical Statistics.** The mathematics involved in such fields of statistics as theories of statistical estimation, stratified sampling, sequential analysis, variance analysis and factorial experiments, and linear discriminant functions (9 cred.; grad.; prereq. 121-122-123 and either 5 credits of 107-108 or consent of instructor) VII MWF Donsker
- 206f-207w-208s. Theory of Functions.** Theory of limits for sequences and functions of a continuous variable; infinite series; foundations of theory of functions of real variables, and of a single complex variable (9 cred.; grad.; prereq. 5 credits of 107-108 or consent of instructor) II MWF Hart
- 209. Advanced Modern Algebra.** Topics of modern algebra, such as the theory of rings, division algebras, valuations, algebraic number fields (3 cred.; grad.; prereq. 137 or consent of instructor) (*Not offered*)
- 212-213. Point Set Topology.** Abstract spaces based on notions of neighborhoods, open sets, closure. Subspaces. Properties invariant under homeomorphisms; compactness; connectedness. Separation axioms. Metric spaces; Urysohn's metrization theorem. Transfinite numbers. Jordan curve theorem (6 cred.; grad.; prereq. 206) (*Not offered in 1951-52*)
- 214. Topological Algebra.** Elementary theory of topological groups, rings and fields (3 cred.; grad.; prereq. 213 and either 120 or 170) (*Not offered in 1951-52*)
- 215f-216w. Topological Groups.** Elementary theory and definitions; integration in locally compact groups; representation of topological groups; density (6 cred.; grad.; prereq. 120 or 170 or equiv., and 213) II MWF Kalisch
- 217-218. Mathematical Theory of Probability.** Fundamental concepts of probability and statistics from the standpoint of the Lebesgue-Stieltjes measure and integral. Topics include random variables and distribution functions, conditional probability, statistical independence, special distributions, characteristic function theory, the central limit theorem and other limit theorems of probability (6 cred.; grad.; prereq. 245) (*Not offered in 1951-52*)
- 220s. Algebraic Topology.** Homology groups of abstract complexes; topological invariance of homology groups of topological spaces (3 cred.; grad.; prereq. 120 or 170 or equiv., and 213) II MWF Gelbaum
- 221. Calculus of Variations** (3 cred.; grad.; prereq. 106 and 107 or the old course 107-108) (*Not offered*)
- 237-238. Advanced Mathematical Statistics.** A treatment of the material of statistics from a rigorous mathematical viewpoint. Demonstrations and applications of the limit theorems omitted in a first course in mathematical statistics. The course is at the level of Cramer's book, presupposing a knowledge of the Mathematical Introduction (6 cred.; grad.; prereq. 123 and 245) (*Not offered in 1951-52*)
- 239-240. The Fourier Transform.** The discussion of the theoretical and practical aspects of the Fourier Transform. Its applications to differential and integral equations. Tauberian theorems (6 cred.; grad.; prereq. 245) (*Not offered*)
- 245f. Introduction to Lebesgue Integrals** (3 cred.; grad.; prereq. 208) IV MWF Olmsted
- 246f. Introduction to Wiener Integrals** (3 cred.; grad.; prereq. 208 and consent of instructor) II TThS Cameron

- 247w. **Integration in Function Space** (3 cred.; grad.; prereq. 245 and consent of instructor) II TThS Cameron
 252w-253s. **Linear Spaces** (6 cred.; grad.; prereq. 245) IV MWF Olmsted
 257s. **Seminar in Integration in Function Space** (3 cred.; grad.; prereq. 247) II TThS Cameron
 271-272-273. **Theory of Linear Differential and Integral Equations** (9 cred.; grad.; prereq. 208) (Not offered in 1951-52)

Note—Some of the courses listed in the *Bulletin of the Graduate School* are open to properly qualified juniors and seniors. For further information consult the chairman of the Department of Mathematics.

MILITARY SCIENCE AND TACTICS

Department chairman—C. H. Schabacker, Col. Artillery

The programs in Military Science and Tactics leading to commissions in the Army Officers Reserve Corps are available for students in the College of Science, Literature, and the Arts as well as for those in other colleges of the University. For information concerning the requirements and the opportunities in these programs, consult the *Bulletin of General Information*, the *Bulletin of Army, Navy, Air ROTC* of the University of Minnesota or call at the Military Science and Tactics office, Room 106 Armory.

The College of Science, Literature, and the Arts will accept credits from basic and advanced courses in Military Science and Tactics to fulfill a minor toward the B.A. degree.

Basic Courses

- 1f-2w-3s. **First Year Basic Course ROTC.** Military organization, leadership, first aid, maps and aerial photographs, individual weapons and marksmanship. National Defense Act (1 cred. per qtr.; no prereq.) Schedule for 1f: Lect. I MW; II MW; III MW; IV MW; VI MW; VII MW; VIII MW; Lab. VI T; VII T; VI Th. Schedule for 2w: Lect. I MWF; II MWF; III MWF; IV MWF; VI MWF; VII MWF; VIII MWF. Schedule for 3s: Lect. I W; II W; III W; IV W; VI W; VII W; VIII W; Lab. VI-VII T; VI-VII Th
 4f-5w-6s. **Second Year Basic Course ROTC.** Tactics and technique of one of the following Army branches: Antiaircraft Artillery, Corps of Engineers, Ordnance Corps, Quartermaster Corps, Signal Corps, Transportation Corps (1 cred. per qtr.; prereq. 1-2-3 or 6 months of military service)* Schedule for 4f: Lect. III MW; VI MW; VII MW; Lab. VI T; VII T; VI Th. Schedule for 5w: Lect. III MWF; VI MWF; VII MWF. Schedule for 6s: Lect. III M; VI M; VII M; Lab. VI-VII T; VI-VII Th

Advanced Courses

- 151f-152w-153s. **First Year Advanced Course ROTC.** Continued study of tactics and technique of one of the branches listed for the Second Year Basic Course ROTC. (3 cred. per qtr.; prereq. 4-5-6 or one year of military service)* Schedule for 151f: Lect. I MTWF; IV MTWF; Lab. VI T; VII T; VI Th. Schedule for 152w: Lect. I MTWThF; IV MTWThF. Schedule for 153s: Lect. I MWF; IV MWF; Lab. VI-VII T; VI-VII Th
 154f-155w-156s. **Second Year Advanced Course ROTC.** Continued study of tactics and technique of one of the branches listed above, and subject matter common to all branches such as: Military Administration, Military Law, Military Teaching Methods, Leadership, Psychological Warfare (3 cred. per qtr.; prereq. 151-152-153) Schedule for 154f: Lect. II MTWF; VIII MTWF; Lab. VI T; VII T; VI Th. Schedule for 155w: Lect. II MTWThF; VIII MTWThF. Schedule for 156s: Lect. II MWF; VIII MWF; Lab. VI-VII T; VI-VII Th

* Students who have completed six months of prior service in the armed forces (Army, Navy, Marine Corps, or Coast Guard) may receive credit for the First-Year Basic Course. Students who have completed one year of prior service in the armed forces (Army, Navy, Marine Corps, or Coast Guard) may receive credit for both years' Basic Course.

MUSIC

Department Chairman—Paul M. Oberg

To secure the degree of bachelor of arts with a major in music a student must fulfill the requirements of both the Junior and Senior Colleges as stated on pages 10-16 of this bulletin. He must secure 144 credits in courses other than practical music (piano, voice, etc., Courses 11 to 27).

The following courses are required during the first two years and should be taken during the year indicated:

Freshman year—

- Mu. 1T-2T-3T, Music Theory, 3 credits per quarter.
- Some phase of Practical Music (Mu. 11 through 27) 2 or 4 credits per quarter. An entrance test must be taken in Practical Music by all prospective music majors.
- Comp. 4-5-6, Com. 1-2-3 or Eng. A-B-C, 3 to 5 credits per quarter.
- Social Science (Hist. 11-12-13, Medieval History, 3 credits per quarter, recommended)
- Foreign Language—German or French recommended (required for vocalists), 5 credits per quarter. If students have had four years of one foreign language in high school, it is not compulsory for them to take any more language; however, it is highly recommended that as much German and French be taken as possible. Vocalists are also recommended to take Italian.

In the event that a student is exempted from taking Freshman English or Composition, he might elect to take any academic course he wishes; however, Introduction to Art and Humanities are recommended. The student must also complete his Public Health requirements during his freshman or sophomore year.

Sophomore year—

- Mu. 4T-5T-6T, Music Theory, 4 credits per quarter.
- Some phase of Practical Music (Mu. 11 through 27) 2 to 4 credits per quarter.
- Mu. 34-35-36, History of Music, 2 credits per quarter.
- Natural Science (Psy. 1-2, General Psychology, 3 credits per quarter, and Psy. 4-5, Introductory Laboratory Psychology, 2 credits per quarter, recommended).
- Foreign Language (enough credits to complete the 20 credits in Foreign Language).
- Mu. 37-38-39, Keyboard Harmony, 1 credit per quarter (required only of students majoring in piano or organ).

At the end of the sophomore year the student must take a comprehensive examination in practical music to insure that he is prepared for Senior College work. In the following two years he must complete one or two academic minors (see page 14), and earn 36 credits in fields emphasizing one of the following branches of music: composition, history, or normal piano (a training course in piano teaching). During the four years he must earn 30 credits in practical music.[§]

The Music Department is a liberal arts college member of the National Association of Schools of Music. The requirements for entrance and for graduation with this degree as set forth in this catalog are in accordance with the published regulations of the NASM.

Major advisers in the College of Science, Literature, and the Arts—Professor Oberg; Associate Professor Hull.

[§] Students may not take special examinations in practical music (Mu. 11-27) for work done elsewhere while they are in residence at the University.

Major sequences in the College of Science, Literature, and the Arts—

A. History and Literature of Music: Courses 53-54-55, 60-61-62 or 63-64-65, 76, 97-98-99, 144-145-146.

B. Theory and Composition: Courses 60-61-62 or 63-64-65, 97-98-99, 121-122-123, 127-128-129, 141-142-143, 144-145-146, 197-198-199.

C. Normal Piano: Courses 60-61-62 or 63-64-65, 70-71-72, 76, 80-81-82, 97-98-99, 144-145-146.

Modification of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

For a special curriculum in Music Education see the *Bulletin of the College of Education*. For courses in Music Education which are open to students in the College of Science, Literature, and the Arts, see page 112.

Entrance requirements, according to the instrument selected—

Piano: Any major or minor scale in octaves, thirds, sixths, or tenths, in sixteenth notes at M.M., quarter note = 108; Bach Invention or dance from one of the suites; a sonata by Haydn or Mozart; a modern composition of equal difficulty with the sonata.

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. Have a promising voice. Some knowledge of piano is urgently recommended.

Violin: Major and minor scales, arpeggios; the simpler Kreutzer Etudes; a sonata by Handel, Haydn, Mozart, or Schubert; a more modern work displaying special technique peculiar to the violin.

Organ: Same as for piano.

Students who wish to major or minor in Music or Music Education must meet the entrance requirements in practical music before a committee of the faculty of the Music Department. This applies also to academic students who wish to elect courses in practical music for credit. A student may *not* register for a course in practical music for credit until he has passed the required entrance examination.

Courses numbered from 11 to 27,* inclusive, carry either 2 or 4 credits a quarter. The first 12 credits in any one of these courses count as Junior College credits; additional credits count as Senior College credits.

No student may count for graduation more than 36 credits in practical music.

Junior College Courses

1Tf-2Tw-3Ts. Music Theory. An intensive course in the development of musicianship through both auditory and visual perception. The student will participate in extensive ear training, sight singing, and keyboard drills (9 cred.; primarily for music majors and minors.) II MTWThF Ar.; VII MTWThF Ar.

1Tw-2Ts. Music Theory (First two qtrs. of 1T-2T-3T. See 1Tf-2Tw-3Ts) V MTWThF

3Tf. Music Theory (Third qtr. of 1T-2T-3T. See 1Tf-2Tw-3Ts) V MTWThF Ar.

4Tf-5Tw-6Ts. Music Theory. A continuation of Theory 1T-2T-3T with greater emphasis on harmonic analysis, part-writing and clef reading (12 cred.; prereq. 3T) I MTWThF Malcolm; III MTWThF Malcolm; VI MTWThF Ar.

4Tw-5Ts. Music Theory (First two qtrs. of 4T-5T-6T. See 4Tf-5Tw-6Ts) V MTWThF Malcolm

6Tf. Music Theory (Third qtr. of 4T-5T-6T. See 4Tf-5Tw-6Ts) V MTWThF Malcolm
If,w,s. Fundamentals of Music. Knowledge of the piano keyboard; major and minor scales; triads; elementary ear training; rhythmic dictation (2 cred.; for nonmusic majors; no prereq.) I MTWTh Berryman

* Students may not take special examinations in practical music (Mu. 11-27) for work done elsewhere while they are in residence at the University.

110 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 10f,w,s. Introduction to Music.** A lecture and laboratory course introducing the student to the basic elements of music, such as notation and the characteristics of musical tone, together with a study of fundamental musical concepts of rhythm, melody, harmony, polyphony and form. These musical concepts will be demonstrated by recordings and performance of music of all types in western civilization. This course together with Art 1 and Phil. 4 forms a sequence in Fine Arts (4 cred.; no prereq.) Lect. III MWF; lab. III TTh or ar.
- 31f-32w-33s.|| Music Literature.** Primarily for students not majoring in music. Study of various styles, forms, and types of music, including symphony, opera, chamber music, and solo pieces. Fall: Baroque and classical periods; Winter: Romantic period; Spring: Romantic and modern (6 cred.; no prereq.) II MWF Ivory
- 34f-35w-36s.|| History of Music** (6 cred.; soph., jr., sr.; prereq. 3T) II MTWThF Downes
- 37f-38w-39s. Keyboard Harmony.** 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 is also studied (3 cred.; prereq. 3T) II TTh Jennings
- 40f-41w-42s.||†† Orchestra.** A study of orchestral literature through actual performance. Orchestral players from all colleges are invited to participate (3 cred.; prereq. consent of director) 7:30 p.m. T Oberg; strings VIII-IX F
- 43f-44w-45s.||** University Chorus.** The objectives of the University Chorus will be to prepare for performance with the Minneapolis Symphony Orchestra and the University Symphony Orchestra at least two of the major symphonic-choral works. Sequence of quarters is expected and entrance is by audition with the director (3 cred.; prereq. consent of director) IV MW and VIII MW and 7:30 p.m. T Aliferis
- 43Af-44Aw-45As. Church Music Choir.** Attention will be paid to church music in the hopes of appearing at Vesper services in some of the Twin City churches (1 cred. per qtr.; prereq. consent of director) V MTWTh Berryman
- 43StPf-44StPw-45StPs. St. Paul Campus Chorus.** The purpose of this group is to prepare for at least one public appearance each quarter as well as for special events connected with the St. Paul Campus (3 cred.; prereq. consent of director) X TTh Rymer
- 46f-47w-48s.||§§ Concert Band.** Rehearsals and appearances of the University Concert Band covering standard band literature. Rehearsals run each week from 4 p.m. to 5:20 p.m. on days assigned. One sectional meeting each week is required of all members in addition to the full rehearsals. The band makes 3 to 12 appearances each quarter (3 cred.; prereq. consent of director) IX MTTh Prescott; IX MWF Prescott

COURSES IN PRACTICAL MUSIC§

For a statement about credits and prerequisites for courses in practical music other than Courses 40-41-42 and 43-44-45, see statement under Practical Music, page 109.

The first twelve credits in any one of Courses 11 to 27 count as Junior College credits; additional credits count as Senior College credits.

Af-Bw-Cs.§ Piano (No cred.; for students without entrance requirements in piano; no prereq.) Private lesson Ar. Ar. Ar.

Df-Ew-Fs.§ Voice (No cred.; for students without entrance requirements in voice; no prereq.) Private lesson Ar. Ar. Ar.

11f,w,s. Piano—Individual Lessons (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.

11Cf,w,s. Piano—Class Lessons (2 cred. per qtr., only for Music Education students whose chief performing medium is not piano)* VIII Th and II TTh or III TTh or VI TTh

12f,w,s. Voice—Individual Lessons (2-4 cred. per qtr.)* VIII Th and lesson hrs. ar.

12Cf,w,s. Voice—Class Lessons (2 cred. per qtr.)* VIII Th and III TTh or VI TTh or VII MW

13f,w,s. Violin (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.

14f,w,s. Viola (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.

15f,w,s. Cello (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.

16f,w,s. Double Bass (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.

17f,w,s. Flute (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.

* Science, Literature, and the Arts 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 instrument. No student may take class lessons for more than 6 credits. Classes in piano will be composed of 4 students; classes in voice may be composed of 6 students.

§ May be taken only with consent of director.

|| Students may enter any quarter.

** Students may receive credit for two years of chorus.

†† Students majoring in music may earn twelve credits in orchestra.

§§ Students may receive credit for two years of concert band.

- 18f,w,s. **Oboe** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 19f,w,s. **Clarinet or Saxophone** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 20f,w,s. **Bassoon** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 21f,w,s. **Trumpet** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 22f,w,s. **French Horn** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 23f,w,s. **Trombone** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 24f,w,s. **Tuba** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 25f,w,s. **Percussion** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 26f,w,s. **Harp** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.
 27f,w,s. **Organ** (2-4 cred. per qtr.) VIII Th and lesson hrs. ar.

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 53f-54w-55s. Romantic Movement.** A survey of the musical literature of the nineteenth and twentieth centuries with special reference to the influences of the Romantic philosophy. Nationalism and the twentieth-century idioms (6 cred.; jr., sr.; prereq. 35) VII WF Kendall
- 60f-61w-62s. Instrumental Ensemble.** A course in the playing of chamber music by great composers, which includes sonatas, trios, quartets, quintets, etc. (6 cred.; jr., sr.) VI MWF Stephens, Ivory
- 63f-64w-65s. Vocal Ensemble.** A course designed to train students in small group singing (trios, quartets, etc.) and to acquaint them with repertoire in this field from madrigals to opera and oratorio (6 cred.; jr., sr.; prereq. 6 cred. in Course 12 or 12C) VIII MWF Hull
- 66f-67w-68s. The Chamber Singers.** A small mixed vocal ensemble of twelve to sixteen voices. The objective is to prepare for concert presentation sacred and secular music from the sixteenth century to contemporary composers (6 cred.; prereq. consent of instructor) VII MWF Aliferis
- 70f-71w-72s. Normal Piano.** A course covering piano literature, Grades I to V, for the development of students in fundamentals of rhythm, ear training, technic, sight reading, and interpretation at preschool, adult beginner, and advanced levels (6 cred.; jr., sr.; prereq. 2 years of piano) I MWF Kendall
- 76f. Form and Analysis.** Key, harmonic, and form analyses of important contrapuntal and homophonic music, especially that of Bach and Beethoven (3 cred.; jr., sr.; prereq. 6T) II MWF Stephens
- 77f-78w-79s. Elementary Composition.** Original work in musical forms (6 cred.; jr., sr.; prereq. proficiency examination and consent of instructor) Ar. Ar. Fetler, George
- 80f-81w-82s. Advanced Normal Piano.** A laboratory course based on 70-71-72. Supervised presentation of literature to individuals and groups (6 cred.; sr.; prereq. 70-71-72) VIII MWF Kendall
- 90f-91w-92s. Advanced Instrumental Ensemble.** The more difficult chamber music is studied as literature in performance looking toward public presentation (6 cred.; sr.; prereq. 60-61-62) VI MWF Stephens, Ivory
- 93f-94w-95s. Improvisation.** This course which attempts to encourage the student toward greater flexibility in service-playing offers a continuation of the application of harmonic and contrapuntal technique to extemporization at the organ (3 cred.; jr., sr.; prereq. 6T and 12 cred. in organ, Mu. 27 or consent of instructor) II TTh Berryman
- 97f-98w-99s. Counterpoint.** Strict, sixteenth-century and Bach style counterpoint in two and three parts (6 cred.; jr.; prereq. 6T) Lect. IV TTh; rec. IV MF Fetler
- 104f-105w-106s. American Music.** A study of the history of music in America from early colonial times to the present through reading and record listening (6 cred.; jr., sr.; grad.; prereq. Mu. 36 or 9 cred. in American History or American Studies) III TTh Oberg
- 121f-122w-123s. Advanced Harmony.** A course designed to develop the creative approach and application of harmonic materials enabling student to write in various musical styles (6 cred.; jr., sr., grad.; prereq. 6T) III MW George
- 124f-125w-126s. History of Opera.** A survey of opera as music and drama, including production, styles, and cultural background, from the late sixteenth century to the present day with emphasis on modern repertoire which is to be broadcast during the year by the Metropolitan Opera Company (9 cred.; jr., sr., grad.; prereq. 9 cred. in either History of Music, History of Art, History of the Theater, European History

112 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- from 1600, or consent of instructor. This course is offered in alternate years) VI MWF Downes
- 127f-128w-129s. **Composition.** Original work in various forms (6 cred.; sr., grad.; prereq. 97-98-99 and 121-122-123) Ar. Ar. Ar.
- 134f-135w-136s. **History of Church Music.** The study of contemporary trends including relationship of old and new liturgies together with their music (6 cred.; jr., sr., grad.; prereq. 34-35-36 or consent of instructor) IX TTh Berryman
- 141f-142w-143s. **Orchestration.** A detailed study of the instruments of the orchestra together with a practical study of art of symphonic scoring (6 cred.; jr., sr., grad.; prereq. 6T) II WF Aliferis
- 144f-145w-146s. **Bach through Beethoven.** Study of the forms, techniques, and styles of the late Baroque and Classical periods with particular attention to the following masters: Bach, Handel, Gluck, Mozart, Haydn, and Beethoven (9 cred.; jr., sr., grad.; prereq. 36) VI-VII TTh Downes
- 154-155-156. **Music in the Middle Ages and Renaissance.** An intensive study of monophonic music from the period of Gregorian Chant to that of the English Madrigal School (6 cred.; jr., sr., grad.; prereq. 34-35-36) (*Offered in alternate years. Not offered in 1951-52*)
- 164f-165w-166s. **Music in the Baroque Era.** An intensive study of the music of the early, middle, and late Baroque periods in Italy, the Netherlands, Germany, Austria, France, and Spain (6 cred.; jr., sr., grad.; prereq. 34-35-36. This course is offered in alternate years) II MWF Oberg
- 197f-198w-199s. **Advanced Counterpoint.** Practice in the technique of writing three and four voice fugue, double fugue, and the analysis of contrapuntal writing of various periods (6 cred.; jr., sr., grad.; prereq. 97-98-99) VI-VII M Fetler

For Graduate Students Only

- 200f-201w-202s. **Basis of Musical Expression** (9 cred.; grad.; prereq. 56-57-58) VIII-IX MF and conf. hr. ar. Ar.
- 204f,w,s. **Graduate Applied Music** (3 cred. per qtr.; maximum 9 credits; prereq. placement test by Music Dept. staff; minimum of 12 hours practice per week) VIII Th and 1 hr. lesson or 2 half hr. lessons to be ar. Staff
- 209f-210w-211s. **Advanced Topics in Musical Analysis** (9 cred.; grad.; prereq. 76) II MWF Oberg
- 212f,w,s. **Special Problems in Music** (3 to 9 cred.; grad.; prereq. 202 or 211) Ar. Ar. Oberg
- 227f-228w-229s. **Seminar in Composition and Orchestration** (9 cred.; open only to graduates who have completed an undergraduate major sequence in music theory and composition, including the following: 97-98-99, 121-122-123, 127-128-129, 141-142-143, 197-198-199) Ar. Ar. Aliferis

MUSIC EDUCATION

The following courses in Music Education are regularly open to students in the College of Science, Literature, and the Arts:

- Mu.Ed.63w. Band Conducting.** A course designed to give practical experience in conducting recommended band literature of all grades (2 cred.; jr., sr.; prereq. 4-5-6 or equivalent) VII TTh Prescott
- Mu.Ed.65f,w. Instrumentation.** This course involves a theoretical study of orchestral and band instruments, in combination. The physics of tone color is explained. Revision of materials suitable for school use, and discussion of capacity and capability of school performance on the various instruments are undertaken (3 cred.; jr.; prereq. Mu. 6T) II TThS Ivory

NATURAL SCIENCE

See General Studies, page 72.

NAVAL SCIENCE

Department chairman—Captain Cornelius M. Sullivan

The course in Naval Science is designed to give those students enrolled in the Naval ROTC Program the fundamental essentials in naval subjects so that, upon graduation, they may receive a commission in the Navy, Naval Reserve, Marine Corps or Marine Corps Reserve. This course is, however, available to any male student in the College of Science,

Literature, and the Arts as well as to those in other colleges of the University. For information concerning the requirements and the opportunities in the NROTC program consult the *Bulletin of General Information*, or call at the Naval Science office, 203 Armory.

The College of Science, Literature, and the Arts will accept credits from junior and senior courses in Naval Science to fulfill a minor toward the B.A. degree.

Junior College Courses

- 11f. **Naval Orientation** (Naval History and Sea Power) (3 cred.) Drill IV T; lab. II Th or VIII T and any one of the following lect. sections: III MWF; IV MWF; VII MWF; one additional lect. sect. ar. Tracy
- 12w. **Naval Orientation** (Functions of the Navy within the National Military Establishment) (3 cred.) Drill IV T; lab. II Th or VIII T and any one of the following lect. sections: III MWF; IV MWF; VII MWF; one additional lect. sec. ar. Tracy
- 13s. **Naval Orientation** (Duties and Responsibilities of a Naval Officer) (3 cred.) Drill IV T; lab. II Th or VIII T and any one of the following lect. sections: III MWF; IV MWF; VII MWF; one additional lect. sec. ar. Tracy
- 21f. **Naval Weapons** (3 cred.) Drill IV T; lab. II Th or VIII T and any one of the following lect. sections: II MWF; VI MWF; VII MWF Ar.
- 22w. **Principles of Fire Control** (3 cred.) Drill IV T; lab. II Th or VIII T and any one of the following lect. sections: II MWF; VI MWF; VII MWF Ar.
- 23s. **Applied Naval Electronics** (3 cred.) Drill IV T; lab. II Th or VIII T and any one of the following lect. sections: II MWF; VI MWF; VII MWF Ar.

Senior College Courses

I. LINE OFFICER SEQUENCE

- 51f. **Navigational Instruments; Piloting; Maneuvering Board** (3 cred.) Drill IV T; lab. II Th or VIII T and either of the following lect. sections: III MWF; IV MWF Rawie
- 52w. **Rules of the Road; Aerology; Principles of Celestial Navigation** (3 cred.) Drill IV T; lab. II Th or VIII T and either of the following lect. sections: III MWF; IV MWF Rawie
- 53s. **Fixing Position by Observation of Heavenly Bodies** (3 cred.) Drill IV T; lab. II Th or VIII T and either of the following lect. sections: III MWF; IV MWF Rawie
- 61f. **Theory and Construction of Marine Power Plants** (3 cred.) Drill IV T; lab. II Th or VIII T and either of the following lect. sections: II MWF; IV MWF McGuire
- 62w. **The Diesel Engine; Ship Stability and Buoyance** (3 cred.) Drill IV T; lab. II Th or VIII T and either of the following lect. sections: II MWF; IV MWF McGuire
- 63s. **Naval Administration and Principles of Leadership** (3 cred.) Drill IV T; lab. II Th or VIII T and either of the following lect. sections: II MWF; IV MWF McGuire

II. SUPPLY CORPS OFFICER SEQUENCE

- 57f. **Introduction to Supply, Naval Finance, and Naval Accounting** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. London
- 58w. **Supply Ashore** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. London
- 59s. **Basic Supply Afloat** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. London
- 66f. **Advanced Supply Afloat and Ship's Store Operation** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. London
- 67w. **Clothing and Small Stores and Commissary** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. London

Note: For 1951-52 only, Supply Corps courses 67f, 68w, 69s will be offered to designated NROTC seniors on a 4-credit basis.

III. MARINE CORPS OFFICER SEQUENCE

- 54f. **History of the Art of War I** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. MWF Lewis
- 55w. **History of the Art of War II** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. MWF Lewis
- 56s. **U.S. Military History and Policy** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. MWF Lewis
- 64f. **Amphibious Warfare I** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. MWF Lewis
- 65w. **Amphibious Warfare II** (3 cred.) Drill IV T; lab. II Th or VIII T; lect. ar. MWF Lewis

NORWEGIAN

See Scandinavian, page 141.

PERSONAL ORIENTATION

See General Studies, page 73.

PHILOSOPHY

Department chairman—George P. Conger

Major advisers in the College of Science, Literature, and the Arts—Professor Feigl; Associate Professor Sellars; Assistant Professors Holmer and Hospers.

Major sequence in the College of Science, Literature, and the Arts—Courses 50-51-52 and others, to make a total of at least 27 credits in Senior College courses including at least 6 credits in courses numbered above 100.

(Prerequisite for major sequence, Course 1; Course 1A will not be accepted for this requirement; 20 credits of one language, either Greek, Latin, German, or French, with allowance of 5 credits for each year of high school preparatory work.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Many of the courses in philosophy are designed to be in one way or another "integrative"—to take data from other courses and from various fields of interest and ask how they fit together and what their significance is for man and his work. For a list of recommended related courses in other departments consult major advisers.

Courses 1, 2, 3, 1A, 2A, and 3A are introductory. They may be taken singly or in any order, but no student may receive credit for both 1 and 1A, or 2 and 2A, or 3 and 3A. The sections of these courses 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 interdepartmental (or liberal arts) curriculum which is indicated in this bulletin, page 153. Philosophy advisers may be consulted with regard to this curriculum.

For courses in Humanities, see pages 70-72.

Junior College Courses

1Af-2Aw-3As. Selected Problems of Philosophy, Selected Problems of Logic, Selected Problems of Ethics. A special sequence of courses in philosophy especially for prelegal freshmen but open to other students. Only by special permission of the instructor will prelegal students be admitted to 2Aw-3As without 1Af, or to 3As without 2Aw (3 cred. per qtr.; open to prelegal fr., some other fr.* and to soph., jr., sr.; no prereq.) VI MWF Wiggins

1f. Problems of Philosophy. An introductory course dealing with man's most important attempts to understand the world and himself. Brief survey of great philosophies; methods of obtaining knowledge; chief data of the sciences; doctrines of evolution, especially in their bearings on ethics and religion (5 cred.; open to some fr.* and to soph., jr., sr.; no prereq.) II MTWThF Hospers; IV MTWThF Holmer

1w. Problems of Philosophy (See 1f) III MWF Brodbeck; quiz sections as follows: III TTh; IV TTh; VII MTWThF Conger

* Courses 1, 2, 3 and 1A, 2A, 3A are open in any quarter to a limited number of freshmen with the approval of their advisers.

- 1s. **Problems of Philosophy** (See 1f) I MTWThF Hospers; V MTWThF Terrell
- 2f. **Logic**. A study of the difference between logical and fallacious reasoning; types of fallacies; rules of a good definition; syllogisms; proof; hypothesis; generalization; probability (5 cred.; open to some fr.* and to soph., jr., sr.; no prereq.) Lect. III MWF Terrell; quiz sections as follows: III TTh; IV TTh; VII MTWThF Wiggins
- 2w. **Logic** (See 2f) I MTWThF Terrell; IV MTWThF Holmer
- 2s. **Logic** (See 2f) II MTWThF Brodbeck; Lect. III MWF Hospers; quiz sections as follows: III TTh; IV TTh
- 3f. **Ethics**. Problems of life treated in terms of (1) contemporary social, political, and economic forces, and (2) the character of the individual; psychological and philosophical foundations of morality; the reconstruction of morality (5 cred.; open to some fr.* and to soph., jr., sr.; no prereq.) I MTWThF Terrell
- 3w. **Ethics** (See 3f) II MTWThF Hospers
- 3s. **Ethics** (See 3f) IV MTWThF Holmer; VII MTWThF Wiggins
- 4s. **Introduction to Philosophy of Art**. (Formerly Phil. 59.) An elementary study of certain fundamental principles in the appreciation of the arts, with emphasis upon elements of form and expression which the various arts have in common. This course forms the third and last part of a sequence with Art 1 and Music 10, and cannot be taken unless one (or preferably both) of them has been taken previously. For a more thorough study of the philosophy of art, see Course 159-160 (4 cred.; prereq. Art 1 or Music 10) III MTThF Terrell
10. **Science and Religion**. An inquiry into the nature of science and religion as currently interpreted, with an attempt to find grounds of conflict and/or reconciliation (2 cred.; soph., jr., sr.; no prereq.) (Not offered in 1951-52)
20. **Social Philosophy**. A study of conflicting social philosophies of today; liberalism vs. authoritarianism; evaluation of various social, political, and economic institutions in terms of ethical ideals; other problems of social morality; social reconstruction; social utopias (3 cred.; soph., jr., sr.; no prereq.) (Not offered 1951-52)

Senior College Courses

Course 70 is open to sophomores who have an average grade of at least C in all their work. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 50f-51w-52s.§ **General History of Philosophy**. Materials once covered in the course in Readings in Philosophical Classics will be incorporated into this five-hour course. The attention of advanced students is called to Course 230-231-232, listed below (15 cred.; jr., sr.; no prereq.) II MTWThF Shaw
59. **Esthetics**. The role of art in society; esthetic values and standards; analyses of esthetic expression, representation, form, matter, medium, etc.; style and other philosophical problems in the history of art (See 159-160) (3 cred.; jr., sr.; no prereq. (Not offered in 1951-52)
- 70f.|| **Philosophies of Social Reform I: from the French Revolution to 1848**. Social criticism in period of rising industrialism. Consideration of the philosophical bases of liberalism, utopian socialism, and democracy (3 cred.; jr., sr.; no prereq.) III MWF Wiggins
- 71w. **Design for America**. (Formerly Philosophy 21s.) A discussion of the aims of American life with the future as a frame of reference. Potentialities in economics, politics, art, science, and education in their interrelations. Student and faculty participation is stressed (5 cred.; designed primarily as a senior integrative course, but open to juniors on consent of instructor; no prereq.) III MTWThF Wiggins
- 73s. **Philosophy of Law**. A survey of the classical philosophies of law from Plato through the nineteenth century. The nature and method of law, justice, and the judicial process in the light of contemporary thought (3 cred.; soph., jr., sr.; prereq. 6 cred.) III MWF Wiggins
- 81f-82w-83s.§ **Science and Civilization**. (Formerly 80-81-82.) The course attempts to provide an adequate understanding of the evolution of the sciences and of the scientific point of view within the frame of the history of civilization; the meaning of the fundamental problems, methods, concepts, and assumptions of modern science; and the

* Courses 1, 2, 3 and 1A, 2A, 3A are open in any quarter to a limited number of freshmen with the approval of their advisers.

§ Students may enter any quarter.

¶ No student may receive credit for both Phil. 70 and Pol.Sci. 162.

116 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- human and social implications of science in the contemporary world (9 cred.; designed primarily as a senior integrative course, but open to juniors on consent of instructor; no prereq.) IV MWF Brodbeck
- 101f-102w. **Principles of Philosophy.** Topics include knowledge, meaning, truth, reality, mind, and nature, human values and action (4 cred. per qtr.; open only to seniors and graduates who have not had Course 1 or Course 2; no prereq.) III MTThF Feigl
- 106f-107w. **Plato.** Study of the philosophy of Plato based on analysis of major dialogs (6 cred.; jr., sr., grad.; prereq. 50 or consent of instructor) III MWF Sellars
108. **Aristotle.** Study of philosophy of Aristotle based on analysis of selected passages from his major works. Particular attention given to his relationship to Plato. A survey will be made of Aristotelian tradition in Western philosophy (3 cred.; jr., sr., grad.; one course from 50-51-52 or consent of instructor) (*Not offered in 1951-52*)
110. **Rationalism.** The philosophies of Descartes, Spinoza, and Leibnitz (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor) (*Not offered in 1951-52*)
- 111w. **Empiricism.** Philosophies of Locke, Berkeley, Hume (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) IV MWF Shaw
- 111A. **Eighteenth-Century Philosophy.** A study of the main philosophic trends of the eighteenth century. Empiricism and idealism in England (Locke, Berkeley, and Hume); rationalism and materialism in France (Voltaire, Diderot, d'Alembert, Holbach); criticism in Germany (Kant). The course is designed not only for majors in philosophy but also in history, English literature, French, and German (3 cred.; jr., sr., no prereq.) (*Not offered in 1951-52*)
- 112s. **Kant.** A study of the philosophy of Kant based on an analysis of selected passages from his major works (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) IV MWF Sellars
- 113w. **Kierkegaard and Scandinavian Philosophy.** A study of the philosophical tradition in the Scandinavian countries, with special reference to Kierkegaard and his significance (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor) VI MWF Holmer
- 114f. **Introduction to American Philosophy: Puritanism to Pragmatism.** A study of Puritanism, the Revolutionary period, transcendentalism, evolutionism and idealism (3 cred.; jr., sr., grad.; especially for students of American history and literature) VI MWF Brodbeck
- 114Aw. **American Philosophy since William James.** Continuation of 114 (3 cred.; jr., sr., grad.; prereq. 114 or consent of instructor) VI MWF Brodbeck
- 115w. **Contemporary Philosophy.** A study of current systematic and critical philosophies especially idealism, naturalism, realism, pragmatism, positivism, and existentialism, as represented by their principal exponents (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) VII MWF Terrell
- 115As. **Nineteenth-Century Thought.** Main currents in British and European philosophy; the ideological background; the interaction between Continental and British thinkers; realism and positivism; German and British idealism; Romanticism; philosophical psychology; materialism; evolutionism and its philosophical consequences (3 cred.; jr., sr., grad.; prereq. consent of instructor) VI MWF Brodbeck
116. **Philosophy of John Dewey.** A survey of the ethical, social, educational, and logical contributions made to modern thought by this distinctively American thinker (3 cred.; jr., sr., grad.; prereq. 52 or consent of instructor) (*Not offered in 1951-52*)
- 117f-118w-119s. **Readings in Recent Philosophy.** An intensive study of works by Russell, Whitehead, and Collingwood; works by other authors (3 cred. per qtr.; jr., sr., grad.; prereq. 52 or consent of instructor) Ar. Ar. Holmer
- 122w. **Introduction to Indian Philosophy.** Vedas and Upanishads; Charvaka; Jain; Buddhism; Nyáya-Vaisesika; Sankhya-Yoga; Mimamsa; Vedanta (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52, or consent of instructor) IV MWF Datta
- 123f. **Comparative Philosophy.** A survey of the principal Oriental philosophies, Hindu, Buddhist, Taoist, and Confucian, with special attention to comparisons and contrasts with Western systems (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor) VII MWF Conger
- 124s. **Modern Indian Thought.** Vivekananda; Tagore; Radhakrishnan; Iqbal; Gandhi; K. C. Bhattacharya; Aurobindo (3 cred.; jr., sr., grad.; no prereq.) IV MWF Datta
- 125f. **Rationalism: Descartes.** An analysis of the philosophical works of Descartes (2 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor) IV MF Sellars

126. **Rationalism: Spinoza.** A study of the philosophy of Spinoza based primarily on the analysis of his *Ethics*. (2 cred.; jr., sr., grad.; prereq. 125 or consent of instructor) (*Not offered in 1951-52*)
- 127w. **Rationalism: Leibnitz.** A study of the philosophy of Leibnitz based on the analysis of selected philosophical writings (2 cred.; jr., sr., grad.; prereq. 125 or consent of instructor) IV MF Sellars
- 135s. **Philosophy in Modern Literature.** A survey of basic philosophical ideas in modern civilization as they are expressed in major works of literature (3 cred.; jr., sr., grad.; no prereq.) VII MWF Terrell
- 143w. **Theory of Knowledge.** An analysis of the logical structure and experiential roots of knowledge. The topics include meaning, validity, truth, reason and experience, induction, criteria of objectivity and reality (4 cred.; jr., sr., grad.; prereq. 2 or consent of instructor) II MTWF Sellars
- 147f. **Elements of Symbolic Logic and Semantics.** A systematic introduction to modern mathematical logic and the logical analysis of language. The topics include the dimensions of language; calculus of propositions, classes, and relations; applications to foundations of mathematics (4 cred.; jr., sr., grad.; prereq. Course 2 or consent of instructor) II MTWF Brodbeck
- 153s. **Philosophy of Science.** An attempt to provide a clear understanding of the meaning, methods, and implications of modern science through the examination of basic concepts, presuppositions, and procedures. The topics include description, explanation, prediction, experimentation; space, time, number, matter, energy; causality, probability, statistics; organic life, evolution, mind (4 cred.; jr., sr., grad.; prereq. Course 2 or consent of instructor) II MTTF Feigl
- 155s. **Metaphysics.** A study of some recent attempts to discover general principles characteristic of the universe, with special reference to the sciences (5 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor) VII MTWThF Conger
- 159f-160w. **Principles of Esthetics.** The nature of the esthetic experience; standards of esthetic evaluation; the relation of art to nature; the status of subject matter in the arts; the relation of form and content; the concepts of representation, expression, style, meaning, and truth in the arts; the use of symbols in art; the relation of the arts to knowledge, and to society; the relation of esthetics to ethics (6 cred.; jr., sr., grad.; prereq. consent of instructor) III MWF Hespers
- 164s. **Ethical Theory.** Distinguishing characteristics of a moral judgment; applications of moral judgments to motives, acts, consequences, and persons; moral freedom and responsibility; moral relativity, skepticism, and unity; ethical monism and pluralism; paternalism and individualism in ends and means; theory of knowledge as basis of morality; examination of representative systems (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor) III MWF Sellars
165. **Political and Social Ethics.** A discussion of the ethical principles, theoretical and practical, at the basis of the political order (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor) (*Not offered in 1951-52*)
- 170f. **Philosophy of History.** A study of the idealistic, theological, and economic interpretations of history, with particular reference to the concepts of progress, continuity, pluralism, etc., and to the philosophical aspects of historical methods (3 cred.; jr., sr., grad.; prereq. 6 cred. in phil. or 10 cred. in hist.) VI MWF Holmer
- 180f. **History of Religions.** A survey of some phases of primitive religions and of the history, literature, and chief teachings of the more highly developed faiths (3 cred.; jr., sr., grad.; prereq. 6 cred.) VIII MWF Conger
- 181w. **Psychology of Religion.** Current interpretations of religious experience and behavior, according to various psychologies (3 cred.; jr., sr., grad.; prereq. 6 cred.) VIII MWF Conger
- 182s. **Philosophy of Religion.** Discussion of the ground and sanctions of religion, according to various philosophies (3 cred.; jr., sr., grad.; prereq. 6 cred.) VIII MWF Conger
- 191f-192w-193s. **Seminar in Philosophy.** Topics to be arranged according to students' interests, e.g., see courses marked Ar. (9 cred.; sr., grad.; prereq. 9 credits or consent of instructor) Ar. Ar. Conger, Feigl, Sellars, and others

For Graduate Students Only

- 206w-207s. **Seminar in Comparative Philosophy.** 206w: Theory of knowledge and methodology; 207s: Ethics and philosophy of religion (3 cred. per qtr.; prereq. 123 or consent of instructor) VIII-IX Th Datta

118 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 210f-211w-212s. Seminar in Moral Philosophy.** A systematic study at the graduate level of concepts and problems relating to the moral universe of discourse (3 cred. per qtr.; prereq. 164 or consent of instructor) Ar. Ar. Sellars
- 220-221-222. Seminar in Philosophical Analysis.** A systematic study at the advanced level of the basic concepts and problems of epistemology (3 cred. per qtr.; prereq. 143 or consent of instructor) (*Not offered in 1951-52*)
- 223-224-225. Seminar in Philosophy of Language.** A systematic study at the advanced level of concepts and problems relating to the structure, meaning, and use of language. Recent developments in the logical and psychological investigations of language will be analyzed and an attempt made to assess their significance for philosophy. Fall: The logical syntax of language; Winter: Meaning and meaningfulness; Spring: The evaluative and normative use of language (3 cred. per qtr.; jr., sr., grad.; prereq. 143 or 147 or consent of instructor) (*Not offered*)
- 230f-231w-232s. History of Philosophy (Advanced)** (3 cred. per qtr.; primarily for graduate students from other departments who have had no previous courses in philosophy) Ar. Ar. Hospers
- 241w-242s-243. Seminar: Philosophy of the Physical Sciences** (3 cred. per qtr.; prereq. consent of instructor) Ar. Ar. Feigl
- 244f-245w-246. Seminar: Philosophy of Psychology** (3 cred. per qtr.; prereq. consent of instructor) Ar. Ar. Feigl
- 247f-248-249. Seminar: Logic of the Exact Sciences** (3 cred. per qtr.; prereq. consent of instructor) Ar. Ar. Feigl
- 250-251-252s. Seminar: Philosophy of the Social Sciences** (3 cred. per qtr.; prereq. consent of instructor) Ar. Ar. Feigl

PHYSICAL EDUCATION FOR MEN

Department chairman—Louis F. Keller

A towel and locker fee of \$2.50 per quarter is charged all students using physical education facilities for activity. Uniforms for class work or recreational activity are \$2 per quarter.

The following courses in Physical Education for Men are open, with a maximum of 6 credits, to students in the College of Science, Literature, and the Arts. Students planning to enter the College of Education later are held to a requirement of 3 credits.

1Af-Bw-Cs. Sports Education. Sports Education 1A-B-C is an orientation course in a variety of recreational sports in which the student has had little or no experience. The objective is to provide instruction and competition in those sports in which men may participate now and in future years as a means of obtaining recreation, regular exercise, and social intercourse (1 cred. per qtr.; no prereq.)

1Af. Boxing, Wrestling, Handball, Squash, Touchball. II MWF; III MWF; IV MWF; V MWF; VI MWF Chisholm and staff

Swimming, Beginning (For nonswimmers only) II MWF Boyce; VII MWF Thorpe; III TThS Boyce

Adapted Activities (By permission of instructor only) III MWF Osell; IV MWF Osell; VIII MWF Osell

1Bw. Basketball, Volleyball, Stunts. II MWF; III MWF; IV MWF; V MWF; VI MWF Chisholm and staff

Swimming, Beginning. II MWF Boyce; VII MWF Thorpe; III TThS Boyce

Adapted Activities (By permission of instructor only) III MWF Osell; IV MWF Osell; VIII MWF Osell

1Cs. Swimming, Track, Softball. II MWF; III MWF; IV MWF; V MWF; VI MWF Chisholm and staff

Swimming, Beginning. II MWF Boyce; III TThS Boyce

Adapted Activities (By permission of instructor only) III MWF Osell; IV MWF Osell; VIII MWF Osell

2Af-Bw-Cs. Sports Education. The program in Sports Education 2A-B-C offers an opportunity to develop proficiency in an elected recreational sport in which the student has had previous experience (1 cred. per qtr.; no prereq.)

2Af. Bowling.* II TThS Young

Swimming, Intermediate (Prereq. ability to swim 50 yards) II TThS Boyce; VI MWF Thorpe

* The bowling alleys will charge students the regular cost per game.

- Swimming, Advanced (Prereq. ability to swim 100 yards) III MWF Boyce
 Wrestling. VIII MWF Bartelma
 Boxing. VII MWF; VIII MWF; IX MWF Chisholm
 Square and Folk Dancing, Coeducational. II MWF Ar; VII MWF Ar.
 Ballroom Dancing, Coeducational. III TTh Ar.
 Gymnastics and Weight Lifting. VIII MWF Ostrander
 Handball and Squash. VII MWF Ar.
- 2Bw.** Bowling.* II TThS Young
 Swimming, Intermediate (Prereq. ability to swim 50 yards) II TThS Boyce
 Swimming, Advanced (Prereq. ability to swim 100 yards) III MWF Boyce
 Badminton. III T and III-IV Th Brain
 Wrestling. VIII MWF Bartelma
 Boxing. VIII MWF Chisholm
 Square and Folk Dancing, Coeducational. III MWF Ar.
 Ballroom Dancing, Coeducational. III TTh Ar.
 Gymnastics and Weight Lifting. VIII MWF Ostrander
 Basketball. VII MWF Vancisin
 Golf.‡ II MWF; III MWF; IV MWF; II TThS; III TThS Bolstad
 Skating, Beginning. II MWF Ar.
 Skating, Intermediate. III MWF Ar.; II TThS Ar.
 Skating, Advanced. IV MWF; III TThS Ar.
- 2Cs.** Swimming, Advanced. VII MWF Thorpe
 Life Saving (Prereq. ability to swim 440 yards) III MWF Thorpe
 Tennis. V MWF Brain
 Golf.‡ II MWF; II TThS; III MWF; III TThS; IV MWF Bolstad
 Handball and Squash. IV MWF Ar.
 Square and Folk Dancing, Coeducational. II MWF Ar.; VII MWF Ar.
 Ballroom Dancing, Coeducational. III TTh Ar.
 Swimming, Intermediate. II TThS Ar.
 Boxing. VII MWF; VIII MWF; IX MWF Chisholm
 Tennis. II MWF; III MWF Brain

PHYSICAL EDUCATION FOR WOMEN

Department chairman—Gertrude M. Baker

The following courses in Physical Education for Women are open, with elective credit up to 6 credits, to students in the College of Science, Literature, and the Arts. Students planning to enter the College of Education later are held to a requirement of 5 credits.

A physical education fee of \$2.50 per quarter is charged for all activities courses. Maximum fee per student, \$5.00 per quarter. In addition, a \$2.50 fee is charged for the following numbered courses: 54, 56, 87, 88.

Students must report to the Norris Gymnasium for Women the first day of each quarter in order to be placed in the proper section, day, and hour of the activity course. This registration is in addition to the regular registration. For special permission to take two courses in Physical Education, see Miss Tenney, 106 Norris Gymnasium.

Fall¶:

Aquatics

- Swimming, Beginning (For students with no experience in swimming) II MWF;
 III MWF; III TTh
 Swimming, Advanced Beginning (For students with some experience in swimming) IV MWF; VI MWF
 Swimming, Intermediate (For students able to swim in deep water) VIII MWF

* The bowling alleys will charge students the regular cost per game.

‡ Student must furnish his own equipment.

¶ Intermediate and advanced classes are open only to students having had regular instruction and with permission of the instructor.

Swimming, Intermediate and Advanced. III MWF; VII TTh

Swimming, Advanced. VIII MWF

American Red Cross Senior Life Saving. IV MWF

Body Building

Individual Body Building. I MWF; III MWF; III TTh; VIII MWF; VI TTh

Individual Sports

Archery, Elementary. VII MWF; VI MWF

Badminton, Elementary. IV MWF; IV TTh; I MWF; II TTh

Bowling.* II MWF; III MWF; II TTh; III TTh

Fencing. II TTh; V TTh; VIII MWF

Social Games and Mixers. III TTh; VI TTh

Riflemarksmanhip.* V TTh

Rhythms

Ballroom Dance, Elementary. III TTh

Folk and Square Dance. II MWF; VII TTh

Modern Dance, Elementary. IV MWF; VI MWF; VIII MWF

Team Sports

Field Hockey. III TTh

Volleyball. VI TTh

Winter†:

Aquatics

Swimming, Beginning (For student with no experience in swimming) III MWF

Swimming, Advanced Beginning (For students with some experience in swimming) III TTh; VI TTh

Swimming, Intermediate. VII TTh

Swimming, Intermediate and Advanced. VIII MWF

American Red Cross Senior Life Saving. VI MWF

Body Building

Individual Body Building. II MWF; VI MWF; II TTh; III TTh; IV MWF

Individual Sports

Archery, Elementary. V TTh

Badminton, Elementary. II MWF; III MWF; V MWF

Badminton, Intermediate. IV MWF

Bowling.* II MWF; III MWF; II TTh; III TTh

Fencing, Elementary. VI MWF; II TTh

Riflemarksmanhip.* II TTh; V TTh; VI TTh

Skating, Elementary. II MWF; III MWF

Skiing, Elementary. VII-VIII T

Tennis, Elementary.* VIII TTh

Rhythms

Ballroom Dance, Elementary. III TTh; VIII TTh

Tap Dance, Elementary. VII TTh

Modern Dance, Elementary. IV MWF; VII MWF

Modern Dance, Intermediate and Advanced. VI MWF; II TTh

Folk and Square Dance. III MWF

Team Sports

Basketball. I MWF; VI TTh

Volleyball. III TTh

* When registering at Norris Gymnasium for bowling, golf, riflemarksmanhip or tennis, students should ask about the fees for this course which is in addition to the regular physical education fee.

† Intermediate and advanced classes are open only to students having had regular instruction and with permission of the instructor.

Spring†:

Aquatics

Canoeing. III MWF; VI TTh
 Swimming, Beginning (For students with no experience in swimming) IV MWF;
 II TTh
 Swimming, Advanced Beginning (For students with some experience in swim-
 ming) VI MWF; III TTh
 Swimming, Intermediate. II MWF; VIII MWF
 Swimming, Advanced and Diving. IV MWF
 Swimming, Advanced and Synchronized. VIII MWF
 American Red Cross Senior Life Saving. V MWF
 American Red Cross Water Safety Instructors' Courses.* VII MWF

Body Building

Individual Body Building. III MWF

Individual Sports

Archery, Elementary. VI TTh
 Archery, Elementary and Intermediate. II TTh
 Golf, Elementary.** I MWF; V MWF; VI MWF; V TTh
 Golf, Intermediate.** VIII MWF; VII TTh
 Golf, Advanced.** Ar. Ar.
 Horseback Riding, Elementary. VII Th; VIII Th
 Tennis, Elementary.** I MWF; II MWF; IV MWF; V MWF; I TTh; IV TTh
 Tennis, Intermediate and Advanced.** III MWF; V TTh

Rhythms

Folk and Square Dances. II MWF; VII TTh
 Modern Dance, Elementary. IV MWF; VIII MWF
 Modern Dance, Intermediate and Advanced. VI MWF
 Ballroom Dance, Elementary. III TTh

Team Sports

Softball. III MWF; IV TTh
 25f,w,s. First Aid (1 cred.; no prereq.) II TTh (f,s), V MW (w)
 27. Instructors Course in First Aid (1 cred.; prereq. 26 or a current advanced First Aid
 Certificate) (Not offered in 1951-52)
 54s. Camp Leadership (3 cred.; no prereq.) II MWF
 56s. Advanced Folk Dance (2 cred.; prereq. permission of instructor) VII MWF
 80s. Principles of Rhythm (3 cred.; prereq. some rhythm experience) III TTh and IV Th
 Bockstruck
 87w. Dance Composition (2 cred.; prereq. consent of instructor) VIII MWF Bockstruck
 88s. Advanced Problems in Dance Composition (2 cred.; prereq. 87) 3:00-4:15 p.m. TTh Bell

PHYSICS

Department chairman—J. W. Buchta

Major advisers in the College of Science, Literature, and the Arts—Profes-
 sors Buchta, Valasek, and Wall.

Major sequence in the College of Science, Literature, and the Arts—
 Courses 101-103-105 and 107-109-111, plus 6 additional credits in Senior
 College courses.

* This course covers all requirements by the Red Cross for candidates for the rank of "Water Safety Instructor."

† Students must supply their own equipment.

‡ Intermediate and advanced classes are open only to students having had regular
 instruction and with permission of the instructor.

** When registering at Norris Gymnasium for bowling, golf, riflemarksmanship, or
 tennis, students should ask about the fees for this course which is in addition to the
 regular physical education fee.

122 COURSE OFFERINGS AND MAJOR REQUIREMENTS

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education—Professor Buchta.

For the specialized curriculum in natural science, see the *Bulletin of the College of Education*.

Prerequisites for any course in Physics may be waived if a petition for registration in the course is granted by the department. Students who have any credit in one of the sequences 1-2-3, 4-5-6 or 7-8-9 should consult the department chairman before registering in another sequence.

Junior College Courses

1f-2w†-3s. Introduction to Physical Science. Lectures and experimental demonstrations of the principles underlying physical phenomena. A course designed for those who wish a general cultural introduction to physics but do not plan to major in that subject (9 cred.; prereq. high school algebra and plane geometry) III MWF Ar.

1af-2aw†-3as. Introduction to Physical Science—with laboratory included. Fulfils the laboratory-science group requirement (Plan I) in Science, Literature, and the Arts (12 cred.; prereq. high school algebra and plane geometry) Lect. III MWF Ar.; lab. sections as follows: I-II M; VII-VIII M; IX-X M; I-II T; III-IV T; V-VI T; IX-X T; I-II W; I-II Th; III-IV Th; VII-VIII Th; IX-X Th; I-II F; V-VI F; VII-VIII F; IX-X F Wall and assistants

4f-5w-6s. General Physics (primarily for premedical students). 4f: Mechanics; 5w: Heat and electricity; 6s: Sound and light. Laboratory work is an integral part of course (15 cred.; prereq. Math. 15-16, Elementary Mathematical Analysis; or with permission of department chairman Math. 6, Trigonometry, and either Math. 7 or 8, which are courses in college algebra. Premedical students should take Math. 15-16) Lect. and quiz I MTWThF Nafe; lab. sections as follows: III-IV M; V-VI M; VII-VIII M; III-IV T; V-VI T; VII-VIII T; IX-X T; III-IV W; V-VI W; V-VI Th; VII-VIII Th; III-IV F; VII-VIII F Wall and assistants

4s. General Physics (First qtr. of 4-5-6. See 4f-5w-6s) Lect. and quiz III MTWThF Ar; lab. sections as follows: V-VI M; VII-VIII M; I-II T; V-VI T; VII-VIII T; IX-X Th Wall and assistants

7f-8w-9s.* General Physics (primarily for students majoring in physics, mathematics, or chemistry and for students in the Institute of Technology). Mechanics, heat, electricity, sound, light. Laboratory work is an integral part of the course (15 cred.; prereq. registration in analytic geometry for 7, registration in differential calculus for 8; courses must be taken in order given above. Students who completed 7 before spring quarter, 1951 should see chairman of the department before registering for 8) II MTWThF ar.; lab. sections as follows: V-VI M; VII-VIII M; IX-X M; III-IV T; V-VI T; VII-VIII T; IX-X T; V-VI Th; VII-VIII Th; IX-X Th

7s. General Physics (First qtr. of 7-8-9. See 7f-8w-9s) Lect. IV MTWThF Ar.; VI MTWF and VIII Th Ar.; lab. sections as follows: I-II M; VII-VIII M; IX-X M; I-II T; VII-VIII T; IX-X T; I-II W; I-II Th; VII-VIII Th; IX-X Th; I-II F; VII-VIII F; IX-X F

8f-9w.* General Physics (Second and third qtrs. of 7-8-9. See 7f-8w-9s) Lect. IV MTWThF Ar.; VI MTWThF Ar.; lab. sections as follows: I-II M; VII-VIII M; IX-X M; I-II T; VII-VIII T; IX-X T; I-II W; I-II Th; VII-VIII Th; IX-X Th; I-II F; VII-VIII F; IX-X F

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

Senior College credit is allowed for Phys. 8 and 9 to students not majoring in Chemistry, Mathematics, or Physics.

* Senior College credit is allowed for Phys. 8 and 9 to students not majoring in Chemistry, Mathematics, or Physics.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

- 50s. **General Physics.** A fourth quarter of general physics covering selected topics in modern physics. Laboratory work is an integral part of the course (5 cred.; prereq. 7-8-9) Lect. IV MTWThF Ar.; VI MTWF and VIII Th Ar.; lab. sections as follows: I-II M; VII-VIII M; IX-X M; I-II T; VII-VIII T; IX-X T; I-II W; I-II Th; VII-VIII Th; IX-X Th; I-II F; VII-VIII F; IX-X F
73. **Intermediate Thermodynamics.** Fundamental concepts. Temperature and its measurement, equations of state, Carnot cycle, entropy and other thermodynamic functions, first and second laws. Some practical applications (3 cred.; jr., sr.; prereq. 15 cred. in phys., Math. 51) (Not offered in 1951-52)
- 101f-103w-105s.* **Theoretical Physics.** An analytical survey of fundamental principles of mechanics, sound, heat, light, electricity, and magnetism, designed to supplement the general course and to prepare students for more specialized graduate courses (15 cred.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 106 or registration in 106) II MTWThF Nier
- 107f-109w-111s. **Modern Physics.** Selected topics in modern physics such as photoelectric effect, mass spectroscopy, ionization of gases, optical spectra, nuclear physics, radioactivity, X rays (9 cred.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 51) VI MWF Nafe
- 110s-112s.* **Modern Experimental Physics.** Laboratory work. Characteristics of vacuum gauges, mass spectroscopy, electronic tubes and associated circuits, radioactivity, Geiger counters, ionization of gases (3 cred. per qtr.; jr., sr., grad.; prereq. 120-121 or permission of instructor) VI-IX TTh Ar.
- 114f,w,s-116f,w,s-118f,w,s.* **Elementary Physical Investigation.** Special problems, either experimental or theoretical in which the student may have some special interest. Permission of department chairman required for registration (3 cred. per qtr.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 51) Ar. Ar. Ar.
- 120f. **Atomic Physics.** A laboratory course to introduce techniques and methods used in physics research laboratories. Vacuum gauges and systems, properties of charged particles, X-ray diffraction, ionization of gases, mass spectroscopy, photoelectricity, secondary electron emission (3 cred.; jr., sr., grad.; prereq. 7-8-9, Math. 51) VI-IX TTh Ar.
- 121w. **Experimental Nuclear Physics I.** A laboratory course in nuclear physics not requiring extensive knowledge of electronic circuits. Natural radioactivity, cloud chambers, ionization chambers, properties of nuclear radiations, alpha, beta and gamma rays, neutrons; shielding artificial radioactivity, photographic techniques, health protection (3 cred.; jr., sr., grad.; prereq. 7-8-9, Math. 51) VI-IX TTh Ar.
- 122s. **Experimental Nuclear Physics II.** A laboratory course in techniques in nuclear physics requiring knowledge of electronic circuits. Geiger, proportional, scintillation, and coincidence counters. Cosmic rays. Nuclear resonance phenomena. Health monitoring instruments (3 cred.; jr., sr., grad.; prereq. 121, 146 or special permission of instructor) VI-IX TTh Ar.
- 131f. **Geometrical Optics.** Theory of mirrors, prisms, and lenses. Theory of diaphragms and brightness of images. Optical instruments (3 cred.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 51) II TThS Valasek
- 133w. **Physical Optics.** Theory of interference and interferometers. Theory of diffraction, resolving power, and diffraction gratings. Polarized light, crystal optics, and applications (3 cred.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 51) II TThS Valasek
- 134f,w. **Experimental Optics.** Laboratory work in spectrometry, optics of compound lenses, photometry, absorption, interferometry, and polarized light (3 cred.; jr., sr., grad.; prereq. 15 cred. in phys.) VII-IX TTh Valasek
135. **Spectroscopy.** Light sources, instruments and methods used in spectroscopy of the X-ray, ultraviolet, visible, and infrared regions of the spectrum (3 cred.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 51) (Not offered in 1951-52)
- 136w,s. **Spectrum Analysis.** Laboratory work dealing with the measurement of wave lengths, intensities, and absorption coefficients in the infrared, visible, and ultraviolet regions of the spectrum (3 cred.; jr., sr., grad.; prereq. 15 cred. in phys.) VII-IX TTh Valasek
- 144f. **Electrical Measurements.** An experimental course covering ballistic and current galvanometers, magnetic flux measurements, potentiometer methods, D.C. bridges, and audio-frequency A.C. bridges (3 cred.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 51) Lect. III TThS Wall; lab. sections as follows: VI-IX M; VI-IX T; VI-IX Th
- 146w. **Physics of Vacuum Tubes and Associated Circuits.** Thermionics (3 cred.; prereq. 144 and permission of instructor) Ar. Ar. Ar.

* Students may enter any quarter.

124 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 148s. Application of Electronic Circuits.** A study of the application of various electronic circuits which are useful in physics research. Lecture and laboratory work involving amplifiers, computing circuits, servomechanisms, regulating circuits, and others especially adapted to work in physics (3 cred.; jr., sr., grad.; prereq. 146 or consent of instructor for those who already have a basic knowledge of electronics) Ar. Ar. Ar.
- Zool.155,156w,157.18 Biophysics** (3 cred. per qtr.; jr., sr., grad.; prereq. 28 credits distributed between physics and biology and permission of instructor. Physical chemistry and general physiology recommended) (For more complete description of this course, see page 157) Ar. Ar. Schmitt
- 181f-183w-185s. Atomistics and Elementary Quantum Mechanics.** Review of mechanics and electrodynamics and introduction to quantum mechanics, atomic and molecular structure, and spectra, X-ray and photoelectric effect, radioactivity and elementary nuclear physics (3 cred. per qtr.; sr., grad.; prereq. registration in 101-103-105, Math. 107 or permission of instructor) IV MWF Williams
- 191f-192w-193s. Introduction to Mathematical Physics.** An integrated survey with particular emphasis on the partial differential equations of classical mathematical physics. Special topics from mechanics, elasticity, hydrodynamics, acoustics, electromagnetic theory, heat flow, thermodynamics and statistical physics (9 cred.; sr., grad.; prereq. 101-103-105, Math. 107 or equivalent) III MWF Hill

GEOPHYSICS

School of Mines and Metallurgy

- Mines 108f. Introduction to General Geophysics—Physics of the Earth** (3 cred.; jr., sr., grad.; prereq. Phys. 7-8-9, Geol. 1-2. Geol. 125 recommended but not required) III MWF Mooney
- Mines 109w. Introduction to General Geophysics—Elementary Seismology** (3 cred.; jr., sr., grad.; prereq. Geophys. 108) III MWF Mooney
- Mines 110s. Introduction to Exploration Geophysics** (3 cred.; jr., sr., grad.; prereq. Phys. 7-8-9, Geol. 1, 2 or 11. Geol. 125 recommended but not required) II MWF Mooney
- Mines 125f. Principles of Seismic Exploration** (2 cred.; jr., sr., grad.; prereq. Phys. 7-8-9; Geol. 125; M.&M. 25) III TTh Mooney
- Mines 126w. Principles of Gravity and Magnetic Exploration** (2 cred.; jr., sr., grad.; prereq. Geophys. 125) III TTh Mooney
- Mines 127s. Principles of Electrical Exploration** (2 cred.; prereq. Geophys. 126) II TTh Mooney

These courses are part of a five-year curriculum offered in the Institute of Technology. For further information consult the *Bulletin of the Institute of Technology*. The courses may be taken for credit by students in this college.

PHYSIOLOGY

College of Medical Sciences

Department chairman—Maurice B. Visscher

Major adviser in the College of Science, Literature, and the Arts—Dr. King.

Major sequence in the College of Science, Literature, and the Arts—Course 106-107; 15 credits in approved Senior College courses in related fields.

Modification of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Junior College Courses

- 4f.* Human Physiology** (4 cred.; prereq. 1 qtr. zool., 1 qtr. chem.) Lect. III MWF; conf. IV F Ar.
- 4s.* Human Physiology (See 4f)** Lect. VIII T and VII-VIII Th; conf. VII T Ar.

* Will not count for credit for admission to the Medical School except by permission of the dean of that school.

† Any section of this course may be taken separately.

‡ The schedule for this course is uncertain. Students wishing to take it should consult the department.

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 60f. **Human Physiology** (6 cred.; prereq. courses in physiological chemistry and human or mammalian anatomy; primarily for Medical Technology and 5-year nursing students) Lect. II MTThFS; lab. II-IV W
60w. **Human Physiology** (See 60f) Lect. I MWThF; conf. II F; lab. II-IV W
101w. **Human Physiology** (Formerly 58-59) (10 cred.; prereq. courses in physiological chemistry and human or mammalian anatomy; primarily for dental students) Ar. Ar. Staff
106s-107su.** **Human Physiology** (Formerly 103-104) (15 cred.; jr., sr.; prereq. courses in zoology, organic chemistry, and neuroanatomy; primarily for medical and graduate students) This is now a single course, and registration for either 106 or 107 singly is not permitted. Ar. Ar. Staff

POLITICAL SCIENCE

Department chairman—Harold S. Quigley

Major advisers—Professors Quigley, Anderson, Christensen, Mills, Short; Associate Professors Levi, McLaughlin, and Sibley; Assistant Professor McClosky.

Preparation for a major sequence—Fifteen credits, including Course 1-2 (6 cred.) or 5 (5 cred.), and A-B (6 cred.), and 3 credits selected from Courses 3 (3 cred.), C (3 cred.), and 25 (3 cred.); plus History (1-2-3 or 4-5-6 or 20-21-22), or Economics (6-7 and 5), or Sociology (1 and 45). In addition Philosophy 2 and Psychology 1-2 are recommended.

Major sequence—The preparatory work noted above is designed to provide a general knowledge of (1) the systems of government of the United States and of major European states, and (2) the principal terms and concepts of political science. To this knowledge the major sequence should add: (3) a knowledge of the works of a number of great contributors to political ideas; (4) fairly exact and thorough knowledge of some extensive part of three of the following fields of political science: (a) American government—including politics, administration, public law and local government (courses numbered 51-52-53, 80, and those numbered from 100 to 139); (b) comparative government (courses numbered 97 and from 140 to 159); (c) political theory (courses numbered 160-170); and (d) international relations (courses numbered 85 and 171-199). In addition the student should show the ability to study independently and to write a satisfactory term paper in at least one of the three chosen fields.

To these ends the major student will be required to obtain 30 credits in Senior College courses in political science. He will elect to concentrate in one of his three selected fields and will take courses totaling at least 15 credits in that field. He will obtain at least 9 credits in his second and at least 6 credits in his third selected field. The major and minor work should constitute an integrated plan of study.

Major in international relations (training for the foreign service)—A special program in international relations and foreign areas will be arranged for students of good standing who desire a general introduction to this field. 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 this program and to prepare themselves adequately in modern foreign languages. See page 90 in this bulletin and special bulletins, *Preparation*

** Students may register for lectures without laboratory.

for the Foreign Service and Programs in International Relations and Area Studies; consult Mr. Quigley, Mr. Christensen, Mr. Levi, or Mr. McLaughlin.

Special readings and honors courses—Students of high ability who wish to specialize or to study for graduation honors are advised to take Course 91-92-93. This course may be elected for independent work in any of the three fields noted above.

Major advisers in the College of Education—Mr. Christensen and Mr. Warp.

Requirements for a teacher's certificate—Major recommendation: At least 36 credits in political science including 1-2-3, A-B, and 25, and at least 18 credits in Senior College courses.

Minor recommendation: At least 18 credits in political science, including 1-2-3, or A-B-C, and 25, and 6 credits in Senior College courses.

For a comprehensive curriculum in social studies, see *College of Education Bulletin*.

Note for graduate students—Courses in political science that are indicated as being open to juniors, seniors, and graduates may be taken by graduate students for full credit, subject to the requirement of additional work over and above that assigned to undergraduates, or they may be taken by graduate students for reduced credit.

Junior College Courses

1f-2w†-3s. American Government and Politics. An analysis of the principles, organization, procedures, and functions of government in the United States—national, state, and local. Attention will be given throughout to current issues (9 cred.; no prereq.) IV MWF Christensen; I TThS Warp

1w-2s.† American Government and Politics (First two qtrs. of 1-2-3. See 1f-2w-3s) I MWF Ar.

5f,w,s.‡ American Government and Politics (Covers most of Course 1-2) (5 cred.; no pre-req.) VI MTWThF Taylor

Af-Bw†-Cs.*¶ The State in the Modern World. An examination of principles, structure, and 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. This course will replace Elements (15), Fundamentals of Government and Politics (9-10), and Comparative European Government (7) (9 cred.; no prereq.) III MWF Lippincott

Aw-Bs.*¶ The State in the Modern World (First two qtrs. of A-B-C. See Af-Bw-Cs) II MWF Turner

25f. World Politics. Introduction to contemporary international relations; the policies of the great powers; nationalism; imperialism; internationalism (3 cred.; no prereq.) VI MWF Mills

25s. World Politics (See 25f) VI MWF Mills

Senior College Courses

Senior College courses in this department are open to Junior College students who have an average grade of C in the prerequisite courses, subject to the general rule that courses which carry graduate credit may not be taken earlier than the third quarter of the student's sophomore year.

* Students may not receive credit for A if they have received credit for the old Courses 9-10 or 15, for B if they have received credit for the old Course 15, or for C if they have received credit for the old Course 7.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ This course covers most of Pol.Sci. 1-2. No student will be given credit for both Courses 1-2 and 5. Course 5 may be substituted for 1-2 whenever 1-2 is required.

¶ Course C may be taken concurrently with B.

- 51f-52w†-53s. Field Work in Government and Politics.** Field study of political organization, leadership, and activities in the local community; performance of typical operations in government such as preparing and presenting reports, drafting bills, formulating budgets, conducting meetings and elections (9 cred.; jr., sr.; prereq. 9 cred. Course 53 may be taken before taking 51-52. Registration limited to Minnesota residents.) VI-VII T, one hr. ar. Naftalin
- 80f. National Government in the United States**—with special reference to current problems and developments (3 cred.; jr., sr.; no prereq. Not open to sophomores or to students who have had Course 1-2 or equiv.) IV MWF Short
- 85s. Problems of World Politics** (3 cred.; jr., sr.; prereq. 25 or Hist. 1-2-3 or consent of instructor) II MWF Mills
- 91f-92w-93s. Honors Work in Selected Fields** (Cred. ar.; jr., sr.; prereq. 18 cred.; consult major advisers) Ar. Ar. Ar.
- 97s. American and European Colonies of Today** (3 cred.; jr., sr.; prereq. 6 cred. or consent of instructor) III MWF Mills
- 101f. Principles of the American Constitution I.** Nature of constitutions, judicial review, national, state, interstate relations (3 cred.; jr., sr., grad.; prereq. 1-2 or equiv.) III MWF Anderson
- 102w. Principles of the American Constitution II.** Organization and powers of the national government (3 cred.; jr., sr., grad.; prereq. 101 or equiv.) III MWF Anderson
- 103s. Principles of the American Constitution III.** Constitutional rights, due process and equal protection of the law (3 cred.; jr., sr., grad.; prereq. 101 or 102 or equiv.) III MWF Anderson
- 104-105-106. American Constitutional Development.** Influence of constitutionalism on American institutions; antecedents of our constitutional system; framing of the Constitution of 1787; executive, legislative, judicial roles in constitutional change; issues and trends in constitutional growth (9 cred.; jr., sr., grad.; prereq. 9 cred. or Hist. 20-21-22) (Not offered in 1951-52)
- Arch.104f. City Planning.** General survey of the economic, governmental, social, and technical phases of city planning and group housing (3 cred.; sr., grad.; no prereq.) III MWF Jones, Anderson, Caplow, Filipetti, Vaile
- 108w. Legislative Organization and Procedure.** A study of Congress and the state legislatures at work (3 cred.; jr., sr., grad.; prereq. 6 cred.) IV MWF Short
- 116w-117s.† Local Government.** Theory, legal basis, areas, organization, politics and administration (6 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor) I MWF Anderson
- 118. Local Government.** Major functions, state supervision, finance (3 cred.; jr., sr., grad.; prereq. 116 or consent of instructor) (Not offered in 1951-52)
- 120f. Municipal Functions** (3 cred.; jr., sr., grad.; prereq. 6 cred.) II TThS Ludwig
- 121w. Municipal Administration** (3 cred.; jr., sr., grad.; prereq. 120 or consent of instructor) II TThS Ludwig
- 122s. Municipal Problems** (3 cred.; jr., sr., grad.; prereq. 121 or consent of instructor) II TThS Ludwig
- 124f. Recent Social Legislation.** Federal, state, and local programs in the field of public assistance and social security, with particular emphasis on the major programs of the Social Security Act, health insurance, and housing (3 cred.; jr., sr., grad.; prereq. 6 cred.) VII MWF Christensen
- 126w-127s. Government and the Economic Order** (6 cred.; jr., sr., grad.; prereq. 9 cred.) IV TThS Warp
- 129w. Social Legislation and Social Institutions in the Scandinavian Countries.** (3 cred.; jr., sr., grad.; prereq. Soc. 1 or consent of instructor) VI MWF Ar.
- 131f. Public Administration.** Organization and areas, administrative responsibility (3 cred.; jr., sr., grad.; prereq. 6 cred.) II MWF Short
- 132w. Public Administration.** Personnel administration (3 cred.; jr., sr., grad.; prereq. 131 or consent of instructor) II MWF Short
- 133s. Public Administration.** Financial administration (3 cred.; jr., sr., grad.; prereq. 131 or consent of instructor) II MWF Short
- 135. Problems of Public Planning** (2 cred. without term paper, 3 cred. with term paper; jr., sr., grad., and soph. with consent of instructor; prereq. 9 cred. (Not offered in 1951-52)

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

128 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 187f. **American Political Parties.** The role and functions of the party in American government; party composition and organization; the process of nomination and policy formulation; the regulation of party organization and activities (3 cred.; jr., sr., grad.; prereq. 6 cred. or 12 cred. in soc. sci.) II MWF Christensen
138. **American Political Campaigns and Elections** (3 cred.; jr., sr., grad.; prereq. 6 cred. or 12 cred. in soc. sci.) (Not offered in 1951-52)
- 141f-142w.† **European Governments.** Theory and practice (6 cred.; jr., sr., grad.; prereq. 6 cred. or 12 cred. in soc. sci.) VI MWF Turner
- 143s. **Government of the U.S.S.R. and Adjacent States** (3 cred.; jr., sr., grad.; prereq. 6 cred.) VI MWF Turner
- 145f. **Government and Politics of the Scandinavian Countries** (3 cred.; jr., sr., grad.; prereq. Course C or equiv. or consent of instructor) VII MWF Ar.
Psy.147s. **Political Psychology** (3 cred.; jr., sr., grad.; prereq. Psy. 140) III TThS Bird
149. **Government and Politics of the British Empire—India and the Tropical Colonies** (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) (Not offered in 1951-52)
150. **Government and Politics of the British Empire—Development of Dominion Status** (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) (Not offered in 1951-52)
151. **British Problems of Closer Union.** Problems of unity within the British Dominions; regional unions with adjacent states (3 cred.; jr., sr., grad.; prereq. 149 and 150 with grade of C+ or better, or consent of instructor) (Not offered in 1951-52)
- 153f. **Japanese Government and Politics.** Constitutional and political development in Japan; political ideas, government, political parties and problems (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) IV MWF Quigley
- 154w. **Chinese Government and Politics.** Constitutional and political development in China; political ideas, government, political parties and problems (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) IV MWF Quigley
- 155w-156s. **Government and International Relations in Latin America.** An analysis of the factors that have conditioned the constitutional and political organization of the principal Latin-American states; their relations with the other American nations, the development and the nature of the inter-American political system (6 cred. or consent of instructor) II MWF Christensen
- 160f. **American Political Thought** (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci. or consent of instructor) III TThS Sibley
- 161w. **Problems of Democracy** (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci. or consent of instructor) III TThS Sibley
- 162s.‡ **Recent Political Thought** (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci. or consent of instructor) III TThS Sibley
- 164f. **Development of Political Thought: Greece and Rome** (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci. or consent of instructor) IV TThS Sibley
- 165w. **Development of Political Thought: The Middle Ages** (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci. or consent of instructor) IV TThS Sibley
- 166s. **Development of Political Thought: Early Modern** (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci. or consent of instructor) IV TThS Sibley
- 167-168-169w.s. **Political Behavior.** Analysis of the various aspects of political behavior, with attention to such topics as: the role of personality and leadership; the functions of myth, ideology and interests; group behavior and public opinion; factors in voting and elections; the consequences of organization; attitudes and the psychology of political preference; quantitative techniques and the measurement of political behavior (9 cred.; jr., sr., grad.; prereq. consent of instructor) 1:00-3:30 MF McClosky
- 171w. **Scandinavian Foreign Policy** (3 cred.; jr., sr., grad.; prereq. 6 cred. in hist. or pol. sci. or consent of instructor) VII MWF Ar.
- 175f-176wf-177s. **Conduct of American Foreign Relations.** The Department of State and the Foreign Service; diplomatic and consular functions and problems; special economic and financial agencies; relations with international organizations; treaties and executive agreements; formulation of policy (9 cred.; jr., sr., grad.; prereq. 9 cred. or Hist. 93-94-95) III TThS McLaughlin
- 180f-181wf-182s. **International Law.** 180f-181w: Relation of international law to individuals, states, international community; jurisdictional problems; survey of principles developed in diplomatic practice, national courts, international adjudications; 182s: War, military occupation, war crimes, neutrality, pacific settlement (9 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor) I TThS McLaughlin

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ No student may receive credit for both Pol.Sci. 162 and Phil. 70.

- 184f. International Organization I.** Development and conditions of success. United Nations and regional organizations (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) I MWF Levi
- 185w. International Organization II.** Specialized agencies and other organs for the promotion of international cooperation, especially in the social and economic field (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) I MWF Levi
- 186s. International Organization III.** International offices and civil service; international administration; planning for an international order (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) I MWF Levi
- 187f. Problems of European Reconstruction.** Plans for political, economic, and social reconstruction of Europe; contributions of European and non-European nations toward reconstruction; present situation in key states; politics of reconstruction (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) IV-V M and 1 hr. ar. Levi
- 191. Far Eastern Politics I.** Political ideas, institutions, and foreign relations of China and Japan prior to the opening of the treaty era in 1842 (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) (*Not offered in 1951-52*)
- 192. Far Eastern Politics II.** Political development and international relations of China and Japan from 1842 to the Washington Conference, 1921 (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) (*Not offered in 1951-52*)
- 193. Far Eastern Politics III.** Contemporary political development and international relations of China and Japan (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) (*Not offered in 1951-52*)
- 194s. The Far East in International Relations** (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) IV MWF Quigley
- 195f. Colonial Government and the Problems of Imperialism.** Motives of American, British, Dutch, French, and Spanish colonization; ancient and modern imperialism (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor) III MWF Mills
- 197w. The Mediterranean Area in World Affairs.** Economic, political and strategic conditions; policies of the European and Asiatic States, post war conflict of interests between the Western powers and Russia. (3 cred.; jr., sr., grad.; prereq. 25 or Hist. 125a-126a-127a) III MWF Mills

Courses Primarily for Graduate Students

The following courses may be taken by seniors majoring in political science with consent of the instructor:

- 201-202. Readings in American Government.** A different topic will be chosen each year. Among topics to be dealt with are federalism and intergovernmental relations, executive-legislative relations, and the judicial process (6 cred.; grad.; prereq. consent of instructor) (*Not offered. Offered in 1952-53*)
- 204w-205s.† Seminar in Public Law** (6 cred.; grad.; prereq. 18 cred. in pol. sci. or consent of instructor) 1:00 to 2:20 TTh Warp
- 207-208-209. Seminar in Theories of Law and Politics** (9 cred.; grad.; prereq. 18 cred. in pol. sci. or consent of instructor) (*Not offered*)
- 210f-211w-212s.† Special Seminar in Public Administration** (9 cred.; grad.; admission only with consent of the staff) 3:30 to 5:20 TTh Ludwig, Short, Warp
- 214w. Seminar in Political Parties** (3 cred.; grad.; prereq. 12 cred. or consent of instructor) VIII-IX W Christensen
- 216-217w-218s. Seminar in Comparative European Government** (9 cred.; grad.; prereq. 12 cred. or consent of instructor) IV-V M Levi
- 219-220-221. Seminar in Political Power in the Modern World** (9 cred.; grad.; prereq. 12 cred. or consent of instructor) (*Not offered*)
- 222-223-224. Seminar in Recent Political Thought, American and Foreign, with Special Reference to the Problems of Democracy** (9 cred.; grad.; prereq. 12 cred. or consent of instructor) (*Not offered*)
- 225f-226w-227s. Readings in the Classics of Politics (including Plato, Aristotle, Machiavelli, Hobbes, Locke, Rousseau, Mill, Marx, Lenin, Hitler)** (9 cred.; grad.; prereq. 12 cred., including 6 cred. in political theory, or consent of instructor) VIII-IX TTh Lippincott
- 228. Seminar in Political Theory: Freedom and Control in the Democratic State** (3 cred.; grad.; prereq. 12 cred. or consent of instructor) (*Not offered*)

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

130 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 229f. **Scope and Methods of Political Science** (3 cred.; grad.; prereq. 12 cred. or consent of instructor) I MWF Anderson
- 238f. **Topics in International Law and Diplomacy I.** Survey of the historical development of the law of nations and of international judicial activity in the modern world (3 cred.; sr. with consent of instructor, grad.; prereq. 180-181 or consent of instructor) 3:30-5:30 F McLaughlin
- 239w. **Topics in International Law and Diplomacy II.** Modern international law; an examination of recent developments and current issues in the law of collective security, international criminal law, the codification and development of law through international agencies (3 cred.; sr. with consent of instructor, grad.; prereq. 180-181 or consent of instructor) 3:30-5:30 F McLaughlin
- 240s. **Topics in International Law and Diplomacy III.** Legal aspects of international trade and finance. Status and rights of business enterprises abroad; their diplomatic protection. Legal regulation of international business transactions: tariffs, quotas, exchange restrictions; taxation; commercial treaties and conventions (3 cred.; sr. with consent of instructor, grad.; prereq. 180-181 or consent of instructor) 3:30-5:30 F McLaughlin
- 242f-243w-244s. **Topics in Colonization and Imperialism** (9 cred.; grad.; prereq. 195-196 or consent of instructor) IX-X W Mills
- 245f-246w-247s. **Seminar in Far Eastern Government and Politics** (9 cred.; grad.; prereq. 153-154 or equiv.) VII-VIII W Quigley
- 248w-249s. **Seminar in International Organization** (6 cred.; grad.; prereq. consent of instructor) IV-V F Levi

PSYCHOLOGY

Department chairman—Paul E. Meehl

Major advisers in the College of Science, Literature, and the Arts—Professors Bird, Elliott, Longstaff, Paterson, and Tinker; Associate Professor Clark; and Assistant Professor MacCorquodale.

A student considering the choice of a major in psychology must consult the Student Counseling Bureau prior to seeking his first conference with a major adviser.

Major sequences in the College of Science, Literature, and the Arts—

A. Experimental psychology. Prerequisites: 1-2 and 4-5. Course 55 is recommended. Courses 101-102-103; 125-126; and 12 additional credits in Senior College courses. Mr. Tinker.

B. Human and animal behavior. Prerequisites: 9 credits in Psychology. Courses 114; 148; 151; either 152 or 153; 165; and 12 additional credits in Senior College courses either in psychology or zoology. Messrs. Elliott and MacCorquodale.

C. Differential psychology. Prerequisites: 1-2 and 4-5. Course 3 is recommended. Course 70 or equivalent; 125-126-127; 130 or 160; Ed.Psy. 120; 3 credits chosen from Psy. 155, Ed.Psy. 140, 142, 144; and 6 additional credits in Senior College courses. Messrs. Paterson, Longstaff, and Clark.

D. Social and political psychology. Prerequisites: 1-2 and 4-5. Course 70 or equivalent; 140; 147; 167; 168; and 12 additional Senior College credits. It is recommended that students elect Journ. 115 and 130-131 as part of the 12 additional credits required. Psy. 56 is recommended to students with certain interests. Messrs. Bird and Clark.

All students majoring in psychology are strongly urged to elect courses in mathematics, especially Math. 15-16. Math. 15-16 or 51 is required for students planning to enter graduate work in clinical psychology.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Majors in psychology may take not more than 33 Senior College credits in psychology, educational psychology, and child welfare com-

bined. This is in accordance with the general principle that a liberal arts degree should not involve over-specialization.

The following fundamental courses in each sequence require original work and should not be taken until as late in the student's program as possible. Sequence A, Courses 101-102-103; sequence B, Courses 151, and 152 or 153; sequence C, 125-126, 127; sequence D, 167, 168.

Honors course—Students interested in the work of an honors course should consult the chairman of the department.

Junior College Courses

Af,w,s,\$ Elementary Psychology. An introduction to psychology with special attention to its applications. For students who do not intend to take either Senior College courses in psychology or a professional curriculum which requires Psy. 1-2. See important footnote to this course and to Psy. 1-2 (5 cred.; fr.,* soph.; no prereq.) 11:00-12:20 MWF Longstaff and Jenkins

1f-2w,† General Psychology. A general introduction to the study of human behavior with emphasis on the development of the individual (6 cred.; soph., jr., sr.; no prereq.) III MWF; V MWF Elliott and others

1w-2s,† General Psychology (See 1f-2w) II MWF MacCorquodale; VIII MWF Heron

1s-2s,† General Psychology (6 cred.; soph., jr., sr.; no prereq.) IV MTWThFS Russell

3s. Psychology Applied to Daily Life. A course in the uses of psychological methods in solving such problems as come up in the treatment of ill health, in the courtroom, reformatory, and prison, in business offices and factories, in advertising, in education, in social and political life, in artistic creation and esthetic enjoyment, and in everyday life (3 cred.; prereq. 1-2) III MWF Longstaff and others

4f-5w,† Introductory Laboratory Psychology. Simple experiments illustrating the subject matter of contemporary psychology. Included are human and animal learning, visual experience, differences in artistic, musical, and other kinds of abilities, measurement of each student's personality traits, and reactions to advertisements (4 cred.; soph., jr., sr.; prereq. may be taken with or after 1-2) (Sections limited to 48) I-II TTh; V-VI TTh; VII-VIII TTh; V-VI MW; VII-VIII MW; III-IV MW; IX-X MW; III-IV TS Tinker and others

4w-5s,† Introductory Laboratory Psychology (See 4f-5w) I-II MW; III-IV ThS; IX-X TTh Tinker and others

4s-5s,† Introductory Laboratory Psychology (See 4f-5w) (4 cred.; soph., jr., sr.; prereq. may be taken with or after Psy. 1-2 or Psy. 2) V-VI MTThF; VII-VIII MTThF; I-II TThFS Tinker and others

Senior College Courses

In this department courses numbered between 50 and 65 are open to sophomores who have an average grade of at least C in all their courses and an average of B in the prerequisite courses.

52s. Genetic Psychology. Parallelism of habits, customs, ways of living, societies, etc., between animals and human beings. Elemental forms of human behavior and characteristics in animal life. Evaluations of different modes of adaptation (3 cred.; jr., sr.; prereq. 1-2) IV MWF Heron

* This course is open to a limited number of first and second quarter freshmen with the approval of their advisers and to third quarter freshmen with a C average.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Psychology A is not a course which can be taken in place of Psy. 1-2 where the latter is required. It is intended primarily for students in home economics, dental hygiene, and the three-year course in nursing. Not for students who expect to take Senior College courses in psychology later. Psychology A cannot be counted toward meeting the natural science requirement for entrance to the Senior College. No credit will be given for any part of Psy. 1-2 if a student has received credit for Psy. A, or G.C. 41, the psychology course which is offered in the General College.

¶ Psychology 1-2 is intended to be the normal beginning course in psychology. It is a prerequisite for all advanced courses in psychology. It is the course prerequisite to Business, Education, Law, Medicine, and Social Work. Psychology 1-2, together with 4-5, meets the natural science requirement for entrance to the Senior College under Plan I.

132 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 55s. **Psychology of Sensation.** An elementary treatment with demonstrations of sensory perception in such areas as vision, hearing, touch, and kinesthesia. Demonstrations and discussions will be related to the everyday experiences of the individual (3 cred.; jr., sr.; prereq. 1-2) IV MWF Tinker
- 56f. **Psychology of Advertising.** Psychological analysis of the basic principles underlying advertising and selling. Consumer research is stressed. Research techniques for investigating advertising problems and the analysis of consumer wants are considered in detail (3 cred.; jr., sr.; prereq. 1-2 and Principles of Economics) II MWF Longstaff
- 56w. **Psychology of Advertising** (See 56f) VII MWF Longstaff
- 70f,s. **Principles of Psychological Measurement.** The uses and limitations of the fundamental varieties of psychological measurement. Psychophysical methods, scaling methods, and psychometric methods (3 cred.; jr., sr.; prereq. 1-2, 4-5) IV MWF (f) Clark; VI MWF (s) Clark
- 86s. **Biographical Psychology.** Human personalities in relation to their ancestries, their bodies, and their environments, physical and social (3 cred.; sr.; prereq. 12 cred. in psy.) III MWF Elliot
- 90f,91w,92s. **Readings in Psychology.** Tutorially directed reading and preparation of reports on special topics, usually supplementing an advanced course already completed (Cred. ar.; jr., sr.; prereq. 1-2 and 3 additional cred., and written permission of instructor) Ar. Ar. Elliott, Bird, Paterson, Tinker, Heron, Longstaff, Clark, Meehl, MacCorquodale, Rosen, Russell, Schachter, Jenkins
- 101f-102w†-103s. **Experimental Psychology.** An advanced treatment of emotions, psychophysical methods, association, reaction time, sensation and perception. After several experiments involving the use of standard equipment, the student completes a minor research project (3 cred. per qtr.; jr., sr., grad.; prereq. 1-2; and 4-5 or equiv. in another science) VII MWF and VIII WF Tinker
- 108f. **Systems of Psychology.** A reading course on the chief systems or schools of theoretical psychology. A term paper is required (3 cred.; sr., grad.; prereq. preparation for advanced work in psychology and consent of instructor) Ar. Ar. Elliott
- 114w. **Human Behavior.** An integrative approach, examining the background, development and organization of human behavior. Consciousness and purpose are treated as properties of the living body (3 cred.; sr., grad.; prereq. 1-2; 4-5 or Zool. 1-2-3, or Phil. 1) II TThS Elliott
- 125f-126w,§ **Psychology of Individual Differences.** Quantitative studies of such factors as age, sex, race and nationality, physical traits, family heredity, and environment in the causation of individual differences in abilities and temperament (3 cred. per qtr.; sr., grad.; prereq. 1-2; 4-5 or 5 cred. in statistics) II MWF (for advanced majors or minors) Paterson; II MWF (for general students) Jenkins
- 125s,126s,§ **Psychology of Individual Differences** (6 cred. See 125f-126w) II MTWThFS Jenkins
- 127f,w,s. **Projects in the Psychology of Individual Differences** (3 cred.; sr., grad.; primarily for majors in Sequence C; prereq. 125-126) Ar. Ar. Paterson, Longstaff, Jenkins
- 128f-129w. **Psychology of Learning.** Psychological theory: its characteristics and function. Critical analysis of all learning theories and their application to problems of normal and abnormal behavior (3 cred. per qtr.; jr., sr., grad.; prereq. 9 cred. in psy.) II MWF Heron
- 130f. **Vocational and Occupational Psychology.** Psychology of individual differences in intelligence, aptitudes, interests, and training, with special reference to vocational guidance and problems of occupational adjustment. Lectures and laboratory work (3 cred.; jr., sr., grad.; prereq. 9 cred. in psy.) Lect. I MW Ar.; lab. V-VI F
- 130w. **Vocational and Occupational Psychology** (See 130f) Lect. IV TTh Paterson; lab. V-VI F; VII-VIII F
- 130s. **Vocational and Occupational Psychology** (See 130f) Lect. IV TTh Paterson; lab. V-VI W; VII-VIII W
- 132f-133w,† **Psychology of Motivation.** Classical and contemporary theories of motivation. Elaboration of basic drives into motives, acquisition of new drives and goals; dynamics of the elaborated drive structure. Particular reference to motivation in complex situations involving set, level of aspiration, the Zeigarnik effect, frustration, etc. (6 cred.; jr., sr., grad.; prereq. 9 cred. in psy.) VII MWF Russell

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Course 126 may not be taken until after completion of 125.

- 135f-136w-137s. Occupational Counseling.** Occupational information as used in counseling. Study of educational and occupational training opportunities and requirements. Psychological techniques in case analysis, interviewing, and remedial work. Types of vocational problems. Illustrative case histories (2 cred. per qtr.; sr., grad.; prereq. for 135-136, 9 cred. or consent of instructor; for 137, 130) VIII-IX M Ar.
- 140w. Social Psychology.** A study of experimental investigations of group behavior. Special emphasis will be put upon the place of emotions, drives, and personality traits in the adjustment of individuals to the demands of modern societies (3 cred.; jr., sr., grad.; prereq. 1-2, 4-5, and 9 cred. in soc. sci.) II TThS Bird
- 144f-145w.^f Abnormal Psychology.** Normal and abnormal behavior contrasted. Emphasis on the dynamics, and particularly the social determinants, of personality maladjustments (6 cred.; jr., sr., grad.; prereq. 9 cred. in psy.; or 6 cred. in psy. and either Zool. 1-2-3 or 12 cred. in soc. sci.) IV TThS Bird, Rosen
- 147s. Political Psychology.** A consideration of problems and points of view falling within the area of both political science and psychology. The importance of deriving techniques for the identification of political attitudes. The part played by psychological factors in the determination of belief, propaganda, and public opinion (3 cred.; jr., sr., grad.; prereq. same as for 140) III TThS Bird
- 148w. Physiological Psychology.** The elements of neural anatomy and physiology, tonus, neuromuscular set, integration, and the neural basis of learning. The treatment of these topics will stress their importance for psychology (3 cred.; jr., sr., grad.; prereq. 1-2; 4-5 or Zool. 1-2-3, or consent of instructor) IV MWF Hathaway
- 151f. Animal Psychology.** Historical, philosophical, and biological foundations; consciousness; motivation; learning; reasoning; judgment; abnormal behavior; social influences (3 cred.; jr., sr., grad.; prereq. 1-2; 4-5 or equiv. in another science) VI MWF Heron
- 152w,153s. Individual Investigations in Animal Psychology.** Students may enter either quarter. Each student, working independently, attempts the solution in the laboratory of a definite problem (3 cred. per qtr.; jr., sr., grad.; prereq. 151) Ar. Ar. Heron
- 155s. Industrial Psychology.** Psychological problems in industrial production with special reference to biomechanics (the adaptation of the machine to the capacities and limitations of the operator), work and effort, and the role of communication in an industrial organization (3 cred.; jr., sr., grad.; prereq. 1-2 and Math. 15-16 or equivalent or 10 cred. of statistics) V MWF Russell, Jenkins
- 160f,w. Psychology in Personnel Work** (3 cred.; jr., sr., grad.; prereq. 1-2, 4-5, or 3 cred. in statistics, and Principles of Economics or permission of instructor) III MWF Longstaff and others
- 165f. Advanced General Psychology.** A reconsideration of the topics of general psychology with special emphasis on behavior theory and the methods of science. Historical backgrounds, learning, motivation, emotion, and language are discussed (3 cred.; jr., sr., grad.; prereq. 1-2 and one course numbered above 50) VII MWF MacCorquodale
- 167w. Techniques and Problems of Public Opinion Analysis.** Emphasis on the determinants of opinion, formulation of questions, methods of sampling, social implications of polling, and applications of polling to elections, morale, and national and international issues (3 cred.; sr., grad.; prereq. for undergraduate students 140 or 147; for graduate students, a course in statistics) VII MWF Clark
- 168s. Research Project in Public Opinion Analysis.** Students in journalism will be assigned to problems in cooperation with technical advisers in journalism (3 cred.; sr., grad.; prereq. 167) Ar. Ar. Clark
- 171f-172w.^f Clinical Psychology.** A survey of the methods of clinical psychology in relation to mental deficiency, special abilities and disabilities, behavior problems, personality disorders, and psychosomatic disturbances in adults and children (6 cred.; sr., grad.; prereq. 144, either 125 or Ed.Psy. 120 or 5 cred. in statistics and 6 additional cred. in psy. or child welfare, or ed. psy. Students intending to use this course professionally should postpone taking it until they are in the Graduate School) VI MWF Meehl

For Graduate Students Only

- 200-201-202. History of Psychology I: European**
203-204-205. History of Psychology II: American

^f To receive credit for any part of this course a student must complete the parts preceding the dagger.

134 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 207-208-209. **Group Dynamics**
210-211-212. **Research Problems**
215,216,217. **Seminar in Special Areas of Psychology and Related Sciences**
219. **Psychology of Personality**
220-221-222. **Personality, Its Structure and Dynamics**
230-231-232. **Field Work in Psychometrics and Applied Psychology**
235-236-237. **Clinical Practice in the Student Counseling Bureau**
240,241,242. **Seminar in Student Personnel Work**
243,244. **Experimental Psychodynamics**
Phil.244-245-246. **Seminar: Philosophy of Biology and Psychology**
246. **Advanced Abnormal Psychology**
250-251-252. **Topics in Psychology**
253-254. **Clinical Use of Projective Techniques**
256. **Advanced Psychology of Advertising**
257-258-259. **Laboratory Seminar in Group Dynamics**
260-261-262. **Seminar in the Applications of Psychological Methods to the Study of Psychiatry**
265-266-267. **Seminar in Advanced Clinical Psychology**
270. **Advanced Psychological Measurement**
271-272-273. **Seminar in Recent Literature of Psychology**
274. **Preclinical Practicum in Clinical Psychology**
280-281-282. **Psychology for Fellows in Psychiatry or Neurology**
286. **Advanced Biographical Psychology**
290. **Theory of Projective Methods**
291. **Practicum in Interpretation of Projective Techniques**
295-296-297. **Seminar in Individual Differences and Applied Psychology**
299. **Tabulating Equipment Laboratory**

PUBLIC HEALTH

Medical School

Department chairman—Gaylord W. Anderson

Advisers in the College of Science, Literature, and the Arts—Professor Anderson; Associate Professor Thomson; and Professor Treloar for Biostatistics.

Major advisers in the College of Education—Professor Anderson; Associate Professor Grout.

Major sequence in Biostatistics in the College of Science, Literature, and the Arts—Courses 110, 111, 120, 121, 130, 131, and 18 credits in Senior College courses approved by the adviser.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Minor sequence in Public Health in the College of Education—Courses 50 or 51 or 100 and 57, 59, 102, Bact. 53, and Physiology 2, 4, or 51.

For additional details of courses of study in public health consult the *Bulletin of the School of Public Health*.

Junior College Courses

3f,w,s,8 Personal Health. Elementary principles of normal body function; predisposing and actual causes of disease; ways in which disease may be avoided (2 cred.; fr. soph.; no prereq.; not open to students who have taken Human Biol. G.C. 10C) VI MW Thomson

4w,8 Health Problems of the Community. Personal health and prevention of disease in the family; relation to community health and disease control, important diseases and their prevention (2 cred.; prereq. 3 or G.C. 10C, or successful passing of exemption exam.; exemption from P.H. 3 on basis of military service does not serve as a prerequisite) VI TTh Fox

4s,8 Health Problems of the Community (See 4w) I TTh Fox

[§] No credit is granted for this course in the major sequence in Public Health Nursing.

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 50f,w,§ Personal and Community Health.** Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings (3 cred.; not open to jrs. and srs. who have taken Courses 3, 4, 51, 52, 53, 100, or G.C. 10C; no prereq.) VIII MWF (f), III MWF (w) Thomson
- 51f,w,§ Community Hygiene.** Elementary concepts of development, spread, and prevention of preventable diseases; community programs for their control (3 cred.; jr., sr.; prereq. 3 or G.C. 10C; not open to students who have taken 4, 50, 52, 53, or 100 or those excused from P.H. 3 or 50 on basis of military service) IV MWF Cowan
- 55w. Nursing and Social Problems in the Control of Gonorrhea and Syphilis.** (2 cred.; prereq. 53 or 100 and 62. Soc. 50 or 51 may be substituted by pre-social work students. Open to public health nurses and sociology majors) VII MW Taylor
- 57f,§ Health of Infant and Preschool Child** (2 cred.; jr., sr.; prereq. 4, or 50, or 51, or 52, or 53, or 100) II MF Boynton
- 59w,s,§ Health of the School Child** (3 cred.; jr., sr.; prereq. 3 and 4, or 3 and 51, or G.C. 10C and 4, or G.C. 10C and 51, or 50, or 52, or 53, or 100) (Exemption from P.H. 3 on the basis of military service will not be accepted as a substitute for suitable course in personal health) IV MWF (w), VII MWF (s) Anderson, Thomson
- 60f,s. Tuberculosis and Its Control** (For nurses; others may be admitted by special permission) (2 cred.; prereq. 4 or 50 or 51 or 52 or 53 or 100 and 62) IV TS Myers
- 75w. Community Sanitation** (3 cred.; jr., sr.; prereq. 4 or 50 or 51 or 52) II TThS Ar.
- 100f,s. Elements of Preventive Medicine and Public Health** (For public health nurses, others by special permission) (5 cred.; prereq. 3 or 50, or equiv. and a course in bacteriology) Lect. II MWF Anderson; rec. III TTh; VI TTh Anderson, Thomson, Taylor
- 102f,s. Environmental Sanitation I** (3 cred.; sr., grad.; prereq. 53 or 100 or permission of instructor. This course may be taken concurrently with prerequisites) III TThS (f), I TThS (s) Pierce, Olson
- 103f,w,s. Public Health Bacteriology** (Cred. ar.; grad.; prereq. Bact. 101-102, 116 and permission of instructor) II-III MWF Bauer
- 106w. Public Health Administration** (3 cred.; physicians, engineers, nurses, social workers, and others by permission; prereq. 53 or 100 or equiv.) I TThS Anderson
- 125s. The Community Health Education Program** (3 cred.; prereq. 53 or 100, or 104 and 106, or to be taken concurrently with 106) III TThS Grout
- 126f. Industrial Health Problems** (3 cred.; prereq. 53 or 100, Chem. 1-2 or equiv., or permission of instructor) VII MWF Foker
- 141s. Social and Economic Aspects of Medical Care** (3 cred.; prereq. 106 or permission of instructor) IV TThS Mickey

For other courses in public health see the *Bulletin of the Graduate School*, or the *Bulletin of the School of Public Health*.

BIOSTATISTICS

- 110f. Biometric Principles.** Introduction to statistical analysis with emphasis on basic principles of statistical reasoning. The description of univariate distributions, normal correlations, simple tests of significance, and goodness of fit (3 cred.; jr., sr., grad.; prereq. 18 cred. in biol. sci. or math. through anal. geom.; to be taken with 111) (Undergraduate students admitted to 110f only if electing also to register for 130w) III MWF Treloar
- 110w. Biometric Principles** (See 110f) (Primarily for students proceeding to 120s and 121s the following quarter) II MWF Ar.
- 110s. Biometric Principles** (See 110f) (Primarily for students not proceeding to advanced courses in biostatistics) II MWF Ar.
- 111f. Biostatistics Laboratory.** Practical training in machine calculation and statistical techniques discussed in 110, with which it is to be taken concurrently (2 cred.) I-II MWF; VI-VII MWF; I-II TThS; III-IV TThS; VI-VIII TTh

§ No credit is granted for this course in the major sequence in Public Health Nursing.

136 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 111w. **Biostatistics Laboratory** (See 111f) III-IV MWF; VI-VII MWF
111s. **Biostatistics Laboratory** (See 111f) III-IV MWF; VI-VII MWF
120s. **Correlation Analysis.** Total, partial, and multiple normal correlation and regression; correlation ratio; contingency; biserial methods; tetrachoric correlation; rank-order correlation; the symmetrical table and intraclass correlation (3 cred.; sr., grad.; prereq. 110 with grade of C or above or consent of instructor; to be taken with 121) III MWF Ar.
121s. **Correlation Laboratory.** Practical training in techniques of 120, with which it is to be taken concurrently (2 cred.) I-II MWF; I-II TThS; VI-VIII TTh Ar.
130w. **Random Sampling Distributions.** A discussion of the sampling distributions of the more familiar statistics, the principles of statistical inference, and analysis of the problems of interpretation of differences, with special reference to small samples (3 cred.; sr., grad.; prereq. 110 with grade of C or above, or consent of instructor. To be taken with 131) III MWF Ar.
131w. **Sampling Laboratory.** Study of distributions of statistics derived from small samples by practical test (2 cred.; to be taken with 130) I-II MWF; I-II TThS; VI-VIII TTh

Other courses in Biostatistics designed primarily for students in Public Health, Medicine, or Graduate School may be opened to students in SLA by special arrangement with Mr. Treloar.

PHYSIOLOGICAL HYGIENE

- 91f.* **Principles of Human Function** (4 cred.; jr., sr.; prereq. 8 cred. in chem. and 4 cred. in human anat. or equivalent; primarily for students in Physical Education and Public Health) Lect. IV MWF; lab. VII-VIII T Taylor, Brozek
92w.* **Principles of Human Function** (4 cred.; jr., sr.; prereq. 91 or equiv.; primarily for students in Physical Education and Public Health) Lect. IV MWF; quiz VI T H. L. Taylor, Brozek
95f. **Principles of Human Nutrition** (3 cred.; prereq. 3 cred. in chem. and 10 cred. in biol.) IV MWF J. T. Anderson
191w. **Science of Human Nutrition** (3 cred.; jr., sr., grad.; prereq. 8 cred. in organic chemistry or biochemistry, Courses 91, 92 or Physiol. 103 or equiv., and permission of instructor) Ar. Ar. Keys, J. Anderson
192w. **Physiology of Exercise** (4 cred.; jr., sr., grad.; prereq. Course 92 or Physiol. 103 or equiv. and permission of instructor) Ar. Ar. Keys and staff
194f. **Human Factors in Industry** (3 cred.; sr., grad.; prereq. 20 credits in at least two of the following: chem., biol., psy., engineering; primarily for students in the Schools of Business Administration and Public Health, and the Institute of Technology) Ar. Brozek

RADIO

Courses relating to radio are offered by the School of Journalism and the Department of Speech to juniors and seniors who have had the fundamental prerequisite courses.

RHETORIC

College of Agriculture, Forestry, Home Economics and Veterinary Medicine

Department Chairman—Ralph G. Nichols

- 47f,w,s. **Efficient Reading.** Designed to increase reading rate, comprehension and vocabulary. Open to all students who score above the 30th percentile on a standard reading test. Not a remedial course (1 cred. for SLA students; no prereq.) VI MWF Brown; VII MWF Brown

ROMANCE LANGUAGES

Department chairman—Francis B. Barton

Major advisers in the College of Science, Literature, and the Arts—Professors Pattison and Grismer; Associate Professor Clefton.

Major sequences in the College of Science, Literature, and the Arts—

* Both quarters must be completed for credit except with special permission of instructor.

FRENCH

Courses 70-71-72 or 73-74; 53-54, if the student has not taken French 20; a minimum of 18 additional credits chosen from courses numbered 50 or above, of which at least 9 must be in literary courses.

ITALIAN

Twenty-four credits in courses numbered 50 or above, and 3 additional credits chosen from the following: English 75; French 115-116-117, 121-122-123; Italian 159-160, 161-162; Latin 133; History 65a-66a-67a.

SPANISH

Courses 65-66-67 or 68-69; 53-54, if the student has not taken Spanish 20; 55; a minimum of 15 additional credits chosen from courses numbered 50 or above. Students planning to do graduate work in Spanish must include in this program 9 credits in literary courses numbered above 100.

LATIN-AMERICAN STUDIES

See International Relations and Area Studies, page 90.

MIXED (FRENCH, ITALIAN, AND SPANISH)

Five credits in conversation and composition.

A survey course of 9 credits, and in addition enough credits chosen from courses in any of the three languages numbered 50 or above to make a minimum of 27 credits in all.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major advisers in the College of Education—French: Associate Professor Clefton; Spanish: Professor Grismer.

Requirements for a teacher's certificate—Major recommendation in French: 35 credits in courses numbered above 4, these courses to include Survey of French Literature and one other literary course; 50; 53-54 (or 20); 55; 63; and 103-104-105.

Major recommendation in Spanish: 35 credits in courses numbered above 4, these courses to include 65-66-67 or 68-69 or 74-75-76; 53-54 (or 20); 55; 60 and eight credits chosen from the following: 56; 70-71-72; 103-104-105; 171-172-173.

Minor recommendation: 17 credits in one language in courses numbered above 4 including Survey of French Literature, Survey of Spanish Literature, or Survey of Spanish-American Literature.

Admission to advanced courses—No student will be allowed to elect courses more advanced than intermediate French or Spanish unless he has received an average grade of C in the intermediate courses.

FRENCH

Junior College Courses

1f-2w.8 Beginning French (10 cred.; no prereq. Students submitting one year of high school French for entrance must take Course 2; those offering two years must take Course 3) I MTWThF; IV MTWThF; VI MTWThF

1w-2s. Beginning French (See 1f-2w) III MTWThF; VII MTWThF

1s. Beginning French (First qtr. of 1-2. See 1f-2w) III MTWThF; VII MTWThF

1af-2aw.8 Beginning French—Conversational Section (10 cred.; no prereq.) Demonstration III MTWThF plus lab. drill sections as follows: VI MTWThF; VII MTWThF

2f. Beginning French (Second qtr. of 1-2. See 1f-2w) III MTWThF

3f-4w. Intermediate French (10 cred.; prereq. 1-2 or two years of high school French. Students who have had three years of high school French will omit Course 3 and take Course 4) III MTWThF; VII MTWThF

3w-4s. Intermediate French (See 3f-4w) III MTWThF

[§] Students may not receive credit for both French 1 and French 1a.

- 3s. Intermediate French (First qtr. of 3-4. See 3f-4w) I MTWThF; IV MTWThF; VI MTWThF
 3as. § Intermediate French—Conversational Section (5 cred.; prereq. 1af-2aw) Demonstration III MTWThF plus lab. drill sections as follows: VI MTWThF; VII MTWThF
 4f. Intermediate French (Second qtr. of 3-4. See 3f-4w) II MTWThF
 20f,s. Oral and Written French (5 cred.; prereq. 4, or four years of high school French) VI MTWThF

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 50f,w. French Pronunciation (3 cred.; jr., sr.; prereq. 3-4) II TTh and 1 hr. ar. Sullivan
 52s. French Pronunciation and Dictation (Open only to candidates for the French play) (1 or 2 cred.; jr., sr.; prereq. 3-4) Ar. Ar. Ar.
 53f. French Composition (3 cred.; jr., sr.; prereq. 3-4) VI MWF Desgranges
 54w-55s. French Conversation (6 cred.; jr., sr.; prereq. 53 or 20) VI MWF Desgranges
 63f-64w. Advanced French Composition (6 cred.; jr., sr.; prereq. 53 or 20 with a grade of B) VII MWF Blinoff
 65s. Advanced French Conversation (3 cred.; jr., sr.; prereq. 63) VII MWF Blinoff
 70f-71w-72s. Survey of French Literature (9 cred.; jr., sr.; prereq. 3-4) IV MWF Clefton
 73w-74s. Survey of French Literature (The same as 70-71-72) (10 cred.; jr., sr.; prereq. 3-4) III MTWThF Brackney
 75f-76w-77s. French Civilization and Culture (9 cred.; jr., sr.; prereq. 3-4) III MWF Blinoff
 100. Practical French Phonetics (3 cred.; jr., sr., grad.; prereq. 20 or 53-54 or permission of instructor) (Not offered in 1951-52)
 103f-104w-105s. French Syntax and Composition (3 cred.; jr., sr., grad.; prereq. 63 or reg. in 63) VI F Barton
 107s. Cours de Style (3 cred.; jr., sr., grad.; prereq. 63-64 or permission of instructor) Ar. Ar. Blinoff
 110f. French Literature: Nineteenth Century—Chateaubriand and Romantic Prose (3 cred.; jr., sr., grad.; prereq.* II MWF Barton
 111. French Literature: Nineteenth Century—Drama (3 cred.; jr., sr., grad.; prereq.* (Not offered. Offered in 1952-53))
 112s. French Literature: Nineteenth Century—Poetry (3 cred.; jr., sr., grad.; prereq.* II MWF Clefton
 115f-116w-117s. French Literature: Seventeenth Century. 115f: Formation of the classic ideal; 116w: Corneille, Molière, Racine; 117s: Prose (9 cred.; jr., sr., grad.; prereq.* IV MWF Desgranges
 118f-119w-120s.** French Literature: Eighteenth Century (9 cred.; jr., sr., grad.; prereq.* IV TTh and one hr. ar. Sirich
 121-122-123. French Literature: Sixteenth Century (9 cred.; jr., sr., grad.; prereq. 9 cred. in literature courses above 74 or permission of instructor) (Not offered in 1951-52)
 130. French Romantic Poetry: Victor Hugo (3 cred.; jr., sr., grad.; prereq.* (Not offered. Offered in 1952-53))
 131. Parnassian Poetry (3 cred.; jr., sr., grad.; prereq.* (Not offered in 1951-52))
 132f. Baudelaire (3 cred.; jr., sr., grad.; prereq.* Ar. Ar. Clefton
 146w. Contemporary French Dramatic Literature (3 cred.; jr., sr., grad.; prereq.* II MWF Barton
 156s. French Realistic Novel (3 cred.; jr., sr., grad.; prereq.* VII MWF Barton
 157. Modern French Novel: France, Lott, Bourget (3 cred.; jr., sr., grad.; prereq.* (Not offered in 1951-52))
 158. Contemporary French Novel I. Course conducted in French (3 cred.; jr., sr., grad.; prereq.* (Not offered in 1951-52))

* Prerequisite is 70-71-72 or 73-74.

§ Students may not receive credit for both French 1 and French 1a.

¶ Students who have had three years of high school French may be admitted to French 20 with the consent of instructor.

** Students may enter any quarter with permission of instructor.

159. *Contemporary French Novel II*. Special problems course conducted in French (3 cred.; jr., sr., grad.; prereq.*). (Not offered. Offered in 1952-53)
- 171f-172w-173s.† *History of French Language* (3 cred.; jr., sr., grad.; prereq. one year of Latin or permission of instructor) Ar. Ar. Brackney
- 181f-182w-183s.** *Movement of Ideas in French Literature*. 181f: Sixteenth and seventeenth centuries; 182w: Nineteenth century; 183s: Contemporary period (9 cred.; jr., sr., grad.; prereq.*). IX-X W and one hr. ar. Desgranges

For Graduate Students Only

- 201f-202w-203s. *Old French Phonology and Morphology* (6 cred.) Ar. Ar. Brackney
- 204f-205w-206s. *Reading in Old French Literature* (6 cred.) Ar. Ar. Brackney
- 207f-208w-209s. *Old Provençal* (6 cred.) Ar. Ar. Brackney
- 225f-226w-227s. *French Seminar: Contemporary French Drama* (6 cred.) Ar. Ar. Barton

ITALIAN

Junior College Courses

- 1f-2w.† *Beginning Italian* (8 cred.; no prereq.) IV MTWF Nissen
- 3s. *Intermediate Italian* (4 cred.; prereq. 2 with grade of C) IV MTWF Nissen
- 4f. *Intermediate Italian* (4 cred.; prereq. 3) II MTWF Nissen
- 5w.‡ *Reading Knowledge of Italian* (5 cred.; prereq. knowledge of French, Latin, or Spanish. No previous knowledge of Italian is necessary) II MTWThF Nissen

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

69. *Survey of Italian Literature I* (3 cred.; jr., sr.; prereq.§) (Not offered in 1951-52)
70. *Survey of Italian Literature II* (3 cred.; jr., sr.; prereq.§) (Not offered in 1951-52)
- 71w. *Modern Poetry (Leopardi, Carducci)* (3 cred.; jr., sr.; prereq.§) Ar. Ar. Ar.
- 72f. *Modern Drama (Giacosa, Bracco, Pirandello)* (3 cred.; jr., sr.; prereq.§) Ar. Ar. Ar.
73. *Boccaccio* (3 cred.; jr., sr.; prereq.§) (Not offered. Offered in 1952-53)
- 74s. *Petrarch* (3 cred.; jr., sr.; prereq.§) Ar. Ar. Nissen
- 159-160.** *Dante* (6 cred.; jr., sr., grad.; prereq. one course above 50) (Not offered. Offered in 1952-53)
- 161f-162w. *The Sixteenth Century* (6 cred.; jr., sr., grad.; prereq. one course above 50) III MWF Ar.
- 164s. *Dante in English* (3 cred.; jr., sr., grad.; prereq. consent of instructor) No previous knowledge of Italian is necessary) III MWF Ar.

PORtUGUESE

Junior College Courses

- 1f-2w. *Beginning Portuguese* (10 cred.; no prereq.) VII MTWThF Luckey
- 3s. *Intermediate Portuguese* (5 cred.; prereq. 1-2) VII MTWThF Luckey

Senior College Courses

- 70w-71s. *Brazilian Literature and Culture, in English* (6 cred.; soph. with C average, jr., sr.; prereq. 9 cred. in any literature) Ar. Ar. Luckey

SPANISH

Junior College Courses

- 1f-2w.§§ *Beginning Spanish* (10 cred.; no prereq.; students submitting one year of high school Spanish for entrance must take Course 2; those offering two years must take Course 3) I MTWThF; IV MTWThF; VI MTWThF

* Prerequisite is 70-71-72 or 73-74.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ The prerequisite is Course 3 or Course 4; but for students beginning Italian in the Senior College it may be Course 1-2 with permission of the instructor.

§ Credit will not be given for both Course 1 and Course 5.

** Students may enter any quarter with permission of instructor.

§§ Students may not receive credit for both Spanish 1 and Spanish 1a.

140 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 1w-2s. Beginning Spanish (See 1f-2w) III MTWThF; VII MTWThF
1s. Beginning Spanish (First qtr. of 1-2. See 1f-2w) II MTWThF; VII MTWThF
1af-2aw. §§ Beginning Spanish—Conversational Section (10 cred.; no prereq.) Demonstration II MTWThF plus lab. drill section VII MTWThF
2f. Beginning Spanish (Second qtr. of 1-2. See 1f-2w) III MTWThF
3f-4w. Intermediate Spanish (10 cred.; prereq. 1-2 or two years of high school Spanish. Students who have had three years of high school Spanish will omit Course 3 and take Course 4) III MTWThF; IV MTWThF
3w-4s. Intermediate Spanish (See 3f-4w) II MTWThF
3s. Intermediate Spanish (First qtr. of 3-4. See 3f-4w) I MTWThF; IV MTWThF
3as. §§ Intermediate Spanish—Conversational Section (5 cred.; prereq. 1af-2aw) Demonstration II MTWThF plus lab. drill section VII MTWThF
4f. Intermediate Spanish (Second qtr. of 3-4. See 3f-4w) II MTWThF; IV MTWThF
20w. Oral and Written Spanish (5 cred.; prereq. 4 or 4½ years of high school Spanish) VII MTWThF
20s. Oral and Written Spanish (See 20w) III MTWThF
35w-39s. Spanish Shorthand and Technical Vocabulary (6 cred.; five hours per week; prereq. B grade in Span. 53 and 30 words a minute typing) Ar. Ar. Ar.

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 52w. Spanish Pronunciation and Diction (Open only to candidates for the Spanish play; open to others with permission of instructor) (1 or 2 cred.; jr., sr.; prereq. 3-4) Ar. Ar. Cuneo
53f. Spanish Composition (3 cred.; jr., sr.; prereq. 3-4) II MWF Floripe; III MWF Ar.
54w-55s. Spanish Conversation (6 cred.; jr., sr.; prereq. 53 or 20) II MWF Floripe; III MWF Ar.
56s. Spanish Phonetics and Diction (3 cred.; jr., sr.; prereq. 20 or 53) Lect. IV TTh; lab. VII TTh LeFort
57w,s. Commercial Spanish (5 cred.; jr., sr.; prereq. 20 or 53) VII MTWThF Cuneo
60f. Advanced Spanish Composition (3 cred.; jr., sr.; prereq. 53 or 20 with grade of B) II MWF LeFort
61w-62s. Advanced Spanish Conversation (6 cred.; jr., sr.; prereq. 60) II MWF LeFort
65f-66w-67s. Survey of the Literature of Spain (9 cred.; jr., sr.; prereq. 3-4) VI MWF Pattison
68w-69s. Survey of the Literature of Spain (10 cred.; jr., sr.; prereq. 3-4) VI MTWThF Grismer
70f-71w-72s. Latin-American Civilization and Culture (9 cred.; jr., sr.; prereq. 5 cred. above 4 or permission of instructor) III TThS Cuneo; IV MWF LeFort
74f-75w-76s. Survey of the Literature of Spanish America (9 cred.; jr., sr.; prereq. 3-4) II MWF Irving
103f-104w-105s. Spanish Syntax and Composition (3 cred.; jr., sr., grad.; prereq. 60 or registration in 60) IV T Pattison
110-111-112. Spanish Literature: Nineteenth Century (9 cred.; jr., sr., grad.; prereq.*) (Not offered. Offered in 1952-53)
115f-116w-117s. Spanish Literature: Seventeenth Century (9 cred.; jr., sr., grad.; prereq.*) VII MWF Grismer
120. The Ballad (3 cred.; jr., sr., grad.; prereq.*) (Not offered in 1951-52)
130. Cervantes: Don Quijote (3 cred.; jr., sr., grad.; prereq.*) (Not offered in 1951-52)
131. The Picaresque Novel (3 cred.; jr., sr., grad.; prereq.*) (Not offered in 1951-52)
140f-141w-142s. Contemporary Latin-American Literature (9 cred.; jr., sr., grad.; prereq. a survey of the literature of Spain or Latin America) VIII MWF LeFort
146-147-148. Spanish-American Novel and Short Story (9 cred.; jr., sr., grad.; prereq. a survey of the literature of Spain or Spanish America) (Not offered in 1951-52)

* The prerequisite is 65-66-67 or 68-69.

§ Students who have had three years of high school Spanish may be admitted to Course 20 with the consent of the department.

¶ Students may enter any quarter with permission of instructor.

\$\$ Students may not receive credit for both Spanish 1 and Spanish 1a.

- 155-156-157. *Spanish Literature: Sixteenth Century* (9 cred.; jr., sr., grad.; prereq.*) (Not offered. Offered in 1952-53)
- 171-172-173. *History of the Spanish Language* (3 cred.; jr., sr., grad.; prereq. 4 and 1 yr. of Latin or permission of instructor) (Not offered in 1951-52)
- 174f-175w-176s. *Contemporary Spanish Literature* (9 cred.; jr., sr., grad.; prereq.*) IV MWF Pattison

For Graduate Students Only

- 230-231-232. *Research Methods and Materials* (3 cred.) (Not offered. Offered in 1952-53)
- 241-242-243. *Old Spanish Philology* (6 cred.) (Not offered. Offered in 1952-53)
- 244f-245w-246s. *Readings in Old Spanish Literature* (6 cred.) IX-X Th Irving
- 247-248-249. *Hispano-Arabic Culture* (6 cred.) (Not offered. Offered in 1952-53)
- 250f-251w-252s. *Spanish Seminar* (6 cred.) VIII-IX W Pattison
- 253-254-255. *Seminar in Latin-American Literature* (6 cred.) (Not offered. Offered in 1952-53)

RUSSIAN

Department chairman—To be announced

Junior College Courses

- 1f-2w. *Beginning Russian* (10 cred.; no prereq.) V MTWThF Magner; VII MTWThF Niemi
 3s. *Intermediate Russian* (5 cred.; prereq. 1-2) V MTWThF Magner; VII MTWThF Niemi

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses.

- 51f-52w-53s. *Advanced Russian* (9 cred.; jr., sr.; prereq. 3) VI MWF Niemi
- 56f-57w-58s. *Russian Conversation* (9 cred.; jr., sr.; prereq. 3) VII MWF Blinoff
- 61f-62w-63s. *Russian Composition* (6 cred.; jr., sr.; prereq. 3) VI TTh Blinoff
- 71f-72w-73s. *Rapid Reading of Russian Literature*. Selected readings of modern Russian prose, with the aim of attaining facility in reading (9 cred.; jr., sr.; prereq. 51-52-53 or consent of instructor) Ar. Ar. Niemi
- 75f-76w.|| *Russian Civilization and Culture*. A consideration of various aspects of Russian culture (land, peoples, languages, institutions, intellectual and artistic achievements) with emphasis on the problem: "Is Russia European or Asiatic?" (6 cred.; jr., sr.; prereq. 10 cred. in hist. or lit.) Ar. Ar. Blinoff
- 81-82-83. *Reading of Nonliterary Russian Texts* (9 cred.; jr., sr.; prereq. 51-52-53 or consent of instructor) (Not offered in 1951-52)
- 101f-102w-103s.|| *Survey of Russian Literature*. 101f: Pushkin, Lermontov, Gogol; 102w: Turgenev and Dostoevski; 103s: Tolstoy and the period from 1880 (9 cred.; jr., sr., grad.; prereq. 8 cred. in literature) V MWF Niemi
- 125f-126w-127s. *History of the Russian Language*. A linguistic analysis of the development of the Russian language from the time of the earliest records to the present (9 cred.; jr., sr., grad.; prereq. 51-52-53 or equiv.) Ar. Ar. Magner
- 131f-132w-133s. *From Pushkin to Tolstoy—Advanced Interpretation* (9 cred.; jr., sr., grad.; prereq. 71-72-73 or consent of instructor) Ar. Ar. Niemi

SCANDINAVIAN

Department chairman—Alrik Gustafson

Major adviser in the College of Science, Literature, and the Arts—Professor Gustafson.

Major sequence in Scandinavian languages and literature in the College of Science, Literature, and the Arts—Courses 51-52, 61 or 71, 161 or 162, 171, 172, 191-192-193 and 5 additional credits numbered 51 and above.

* The prerequisite is 65-66-67 or 68-69.

† No knowledge of the Russian language is required.

142 COURSE OFFERINGS AND MAJOR REQUIREMENTS

Major sequence in Scandinavian Area Studies. See special bulletin, *Program in Scandinavian Area Studies*.

Junior College Courses

- 1f-2w. Beginning Norwegian (10 cred.; no prereq.) VI MTWThF Ar.
3s. Intermediate Norwegian (5 cred.; prereq. 1-2 or equiv.) VI MTWThF Ar.
4f-5w-6s. Advanced Norwegian (9 cred.; prereq. 1-2-3 or equiv.) VII MWF Ar.
7f-8w. Beginning Swedish (10 cred.; no prereq.) II MTWThF Lorenzen
9s. Intermediate Swedish (5 cred.; prereq. 7-8 or equiv.) II MTWThF Lorenzen
10f-11w-12s. Advanced Swedish (9 cred.; prereq. 7-8-9 or equiv.) III MWF Lorenzen
22-23.§ Scandinavian Life Today and Yesterday. A descriptive survey of present-day Scandinavian life and culture, with some attention paid to historical origins but with primary emphasis being placed upon twentieth-century developments in political and economic democracy and social reform, in architecture and painting, in music, literature, and the home crafts (6 cred.; no prereq.) (*Not offered. Offered in 1952-53*)

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 51.§ Scandinavian Literature in the Nineteenth Century. A survey of Danish, Norwegian, and Swedish literature from the Romantic Movement and mid-nineteenth-century idealistic realism to the realistic and naturalistic break-through in the drama and prose fiction of the 1870's and 1880's (2 cred.; jr., sr.; prereq. 4-5-6 or 10-11-12 or 8 cred. in lit.) (*Not offered. Offered in 1952-53*)
52.§ Contemporary Scandinavian Literature. A rapid sketch of characteristic trends in the Scandinavian literature of the last half century, especially as reflected in lyric poetry, the short story, and representative autobiographical works (2 cred.; jr., sr.; prereq. 4-5-6 or 10-11-12 or 8 cred. in lit.) (*Not offered. Offered in 1952-53*)
61s. Norwegian Conversation. Practice in conversation employing the common Norwegian vocabulary and idiom of today and based on material drawn from present-day Norwegian life (3 cred.; jr., sr.; prereq. 1-2-3 or equiv.) Ar. Ar. Eikas
71s. Swedish Conversation. Practice in conversational Swedish of today with subject matter drawn from immediate everyday material from present-day Swedish life (3 cred.; jr., sr.; prereq. 10-11-12 or equiv.) Ar. Ar. Lorenzen
Geog.106w. Geography of Scandinavia (3 cred.; jr., sr., grad.) I MWF Kress
Ger.113f-114w. Gothic (6 cred.; sr. with completed major sequence, grad.) VIII-IX W Downs
Soc.116s. Population Theory in the Scandinavian Countries (3 cred.; jr., sr., grad.; prereq. Soc. 1 or consent of instructor) Ar. Ar. Ar.
Soc.117s. Scandinavian Folk Movements: Their Social and Political Significance (3 cred.; jr., sr., grad.; prereq. Soc. 1 or consent of instructor) VII MWF Ar.
Hist.118as. Scandinavia during World War II. (3 cred.; jr., sr., grad.; prereq. Hist. 106a-107a-108a or 122-123-124 or consent of instructor) VI MWF Ar.
Hist.122f-123w-124s. History of the Scandinavian Countries (9 cred.; jr., sr., grad.) III MWF Lindberg
Pol.Sci.129w. Social Legislation and Social Institutions in the Scandinavian Countries (3 cred.; jr., sr., grad.; prereq. Soc. 1 or consent of instructor) VI MWF Ar.
Hist.131f. Economic Developments in the Scandinavian Countries in the Last Half Century (3 cred.; jr., sr., grad.; prereq. a course in economic theory, modern economic history, or consent of instructor) VI MWF Ar.
Pol.Sci.145f. Government and Politics of the Scandinavian Countries (3 cred.; jr., sr., grad.; prereq. Pol.Sci.7 or equivalent or consent of instructor) VII MWF Ar.
161w.§ The Scandinavian Novel I. The late nineteenth century. An examination of "the great tradition" in the modern Scandinavian novel, together with the circumstances, intellectual and political, social and economic, out of which it grew (3 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in lit.) II MWF Gustafson

§ No knowledge of the Scandinavian languages is required.

- 162s.8 The Scandinavian Novel II.** Contemporary trends. A study of characteristic trends in Scandinavian life and thought in the twentieth century as expressed in the prose fiction of Sigrid Undset, Johannes V. Jensen, Olav Dunn, Hjalmar Bergman, Pär Lagerkvist, Halldor Laxness, F. E. Sillampää, and others (3 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in lit.) II MWF Gustafson
- 171f.8 Ibsen and the Beginnings of the Modern Drama.** An intensive examination of the plays of Ibsen, especially with reference to the role he has played as "the founder" of the modern European drama (3 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in lit.) IV MWF Gustafson
- Pol.Sci.171w. Scandinavian Foreign Policy** (3 cred.; jr., sr., grad.; prereq. 6 cred. in hist. or pol. sci. or consent of instructor) VII MWF Ar.
- 172w.8 Strindberg and the Drama in Revolt and Transition.** A study of Strindberg as master of the naturalistic drama and as "the father of modernity" in the European and American theater since his day (3 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in lit.) IV MWF Gustafson
- 173s.8 The Contemporary Scandinavian Theater.** An examination of the Scandinavian theater of today, particularly with reference to its "experimental" trends both in dramatic composition and staging (3 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in lit.) IV MWF Gustafson
- Ger.176-177. Problems and Research Trends in Germanic Philology** (6 cred.; sr., grad.; prereq. at least two Germanic dialects)
176. *The Germanic Languages* (3 cred.) (*Not offered in 1951-52*)
177. *The Germanic Literary Tradition.* A comparative discussion of the native and foreign records of the Old Germanic period (3 cred.) (*Not offered in 1951-52*)
- Art 176f,177w,178s. Scandinavian Art** (3 cred. per qtr.; jr., sr., grad.; prereq. 9 cred. in history of art or 9 cred. in hist. or lit. with consent of instructor) VI TTh and ar. Ar.
- Hist.176bt-177bw-178bs. Selected Readings in Scandinavian History** (9 cred.; sr., grad.) Ar. Ar. Lindberg
- Ger.183.8 Germanic Heroic Poetry** (3 cred.; sr., grad.; prereq. 8 cred. in lit.) (*Not offered in 1951-52*)
185. *History of the Scandinavian Languages* (3 cred.; sr., grad.; prereq. 4-5-6 or 10-11-12 or at least one Germanic language) (*Not offered in 1951-52*)
- 191f-192w-193s. Readings in the Scandinavian Literatures.** Intensive reading of representative Scandinavian texts. Designed especially for majors and minors in Scandinavian, each student fulfilling his reading requirements in Danish or Norwegian or Swedish depending upon his language of primary interest (3 cred. per qtr.; prereq. 4-5-6 or 10-11-12) Ar. Ar. Gustafson
195. *Introduction to Old Norse Language and Literature.* Old Norse phonology and morphology. Survey of Old Icelandic history and literature (4 cred.; sr., grad.; prereq. 113) (*Not offered in 1951-52*)

For Graduate Students Only

- 215f-216w-217s. *Studies in Scandinavian Romanticism* (9 cred.) Ar. Ar. Gustafson
- 218-219-220. *Studies in Late Nineteenth-Century Scandinavian Literature* (9 cred.) (*Not offered. Offered in 1952-53*)
- 221f-222w-223s. *Dramatic Interpretative Problems in Strindberg* (9 cred.) Ar. Ar. Gustafson

SECRETARIAL TRAINING

See Economics, page 55.

SOCIAL SCIENCE

See General Studies, page 74.

SOCIAL WORK

For undergraduate prerequisites, see page 144. For Social Work courses see the *Bulletin of the Graduate School*.

§ No knowledge of the Scandinavian languages is required.

SOCIOLOGY

Department chairman—F. Stuart Chapin

Major advisers in the College of Science, Literature, and the Arts—Professors Chapin, Monachesi, Nelson, and Vold; Associate Professors Caplow, Marshall, Rose; Assistant Professor Martindale.

Major sequences in the College of Science, Literature, and the Arts—

Sequences A, B, and C are built upon a *core* requirement of 21 credits as follows: Courses 53, 111, 120, 162, 180, and 140 or 141, and 170 or 171.

Sequence A. General Sociology—Any 9 credits in Senior College courses, in addition to the core group.

Sequence B. Social Problems and Social Policy—9 credits chosen from Courses 50, 91, and/or any courses listed under Section I. Social Problems and Social Policy, in addition to the core.

Sequence C. Social Research—9 credits chosen from Courses 91, 182, 183, 184-185-186, in addition to the core.

(Prerequisites: For Sequences A, B, C—Soc. 1 and 45, and a total of 15 credits from courses in sociology, anthropology, education, history, philosophy, political science, psychology, and zoology.

Sequence D. An interdepartmental sequence recommended as preparation for graduate study in the School of Social Work. It may be taken as a substitute for the major and minor sequences required for the B.A. degree. Courses 50, 51, 53, 91, 140, 141, 162; three Senior College courses in Sociology numbered 100 or above in addition to those specifically required; Econ. 6-7 or its equivalent; Psy. 144-145; Phil. 70 or Soc. 172 or Pol.Sci. 162; at least 6 credits in Senior College courses in one of the departments of Anthropology, History or Political Science; two courses in public health.

(Prerequisites: For Sequence D, Soc. 1, 45, 49; Pol.Sci. 1-2 or 5; Psy. 1-2.)

Education for social work is on three levels: (1) undergraduate study, which includes social sciences and some courses of primarily informational nature dealing directly with social work; (2) one year of graduate social work study which includes technical theory courses in social work and field work practice; (3) a second year of graduate study devoted to specialization in a particular field of social work, advanced field work practice and research. The undergraduate level of study prepares for some beginning positions in social work. Training at the graduate level opens opportunities for work with professional recognition. For full information regarding graduate professional preparation for social work, see the *Bulletin of the Graduate School* and the special *Bulletin of the School of Social Work*.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education—Professor Marshall.

Requirements for a teacher's certificate—Major recommendation: 36 credits including 1, 14, and 49.

Minor recommendation: 19 or 20 credits including 1, 14, and 49.

Note—Students majoring in sociology in the College of Education must complete two teaching minors in addition to the required professional courses. Teachers who already hold a teacher's certificate may be relieved of this requirement upon petition.

For a specialized curriculum in social studies and a curriculum for "Visiting Teachers," see the *Bulletin of the College of Education*.

Honors course—Students interested in the work of an honors course should consult the chairman of the department.

Junior College Courses

- 1f,w,s. Introduction to Sociology.** A study of the characteristics of human group life. An analysis of the factors associated with the development of human group life and man's social environment; the structure of the social environment and its influence upon the individual's behavior (3 cred.; no prereq.) II MWF Monachesi and others
- 1Af,w. Introduction to Sociology** (For students of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine only) (3 cred.; no prereq.) III TThS Ar.
- 1As. Introduction to Sociology** (For students of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine only) (See 1f,w) I TThS Ar.
- 2f,w,s. Intermediate Sociology.** A sociological analysis of modern American society. Topics emphasized include the distribution of population, urban-rural differences, social factors in business system, occupational groups, the determination of social status, and minority group adjustment. An attempt is made to familiarize the student with current research methods (3 cred.; prereq. 1 or 1A) I MWF (f,s), I TThS (w) Caplow
- 14w,s. Rural Sociology.** A presentation of factual data necessary to an understanding of the problems of rural social life (3 cred.; no prereq) IV MWF Nelson, Marshall
- 14Af,w. Rural Sociology** (For students of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine) (3 cred.; no prereq.) IV TThS Nelson, Marshall
- 45f,w,s. Social Statistics.** An introduction to statistical methods employed in analyses of social data including methods of measuring central tendency, dispersion, significance of differences, and correlation (5 cred.; no prereq. Not open to students who have received credit in Econ. 5) Lect. IV MWF Ar.; lab. sections as follows: VI-VII MW; VI-VII TTh Ar.
- 49f,w,s. Social Problems.** A survey course in contemporary social problems with especial emphasis on personal demoralization and social disorganization (3 cred.; no prereq.) II MWF Martindale

Senior College Courses

Course 53 is open to third quarter sophomores who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 50f-51w. Areas of Social Work.** A survey of social work agencies, their purposes and functions, with consideration of areas of social need within which social work agencies operate (4 cred. each qtr. for Sequence D students; 3 cred. other students; jr., sr.; prereq. 49) III TThS and 3 hrs. of observation for Sequence D students. Ar.
- 50w-51s. Areas of Social Work** (See 50f-51w) II TThS and 3 hrs. of observation for Sequence D students Ar.
- 53f,w,s. Elements of Criminology.** A general survey of the field of criminology (3 cred.; jr., sr.; prereq. same as for 49) II MWF Vold
- 91f. Case Method Applied to the Study of Human Problems.** General application of the interviewing method for students who plan to work professionally in fields involving human relationships, such as Social Work, Public Health Nursing, Speech Pathology, etc. (3 cred.; jr., sr.; prereq. 50 or 51 or consent of major adviser) I TThS Ar.
- 91s. Case Method Applied to the Study of Human Problems** (See 91f) IV TThS Ar.
- 95. Introduction to Public Welfare.** The public welfare function of American government with especial emphasis on the social security programs (3 cred.; jr., sr.; prereq. 50 or 51 or consent of major adviser (*Not offered in 1951-52*))
- 97f-98w-99s. Tutorial and Honors Work in Selected Fields** (9 cred.; jr., sr.; prereq. consent of major adviser in sociology) Ar. Ar. Ar.

146 COURSE OFFERINGS AND MAJOR REQUIREMENTS

I. SOCIAL PROBLEMS AND SOCIAL POLICY

- 100s. **Contemporary Penology.** An analysis of some of the more important developments in recent attempts at the treatment of criminals and the prevention of crime (3 cred.; jr., sr., grad.; prereq. 1, 53 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor) IV MWF Vold
- 101f. **Criminological Theories—Historical and Contemporary.** A consideration and an evaluation of the major historical and contemporary theories of criminal behavior (3 cred.; jr., sr., grad.; prereq. 1, 53 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor) IV MWF Vold
102. **Adult Parole and Probation.** A critical examination of problems and practices in the supervision of adult criminals (3 cred.; jr., sr., grad.; prereq. 1, 53 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor) (Not offered in 1951-52)
- 103s. **Juvenile Courts and Probation.** The historical, legal, and social aspects of juvenile courts and probation. A critical survey of juvenile courts and probation work based upon a consideration of the nature of delinquent behavior—its "causes," its modification, and its prevention (3 cred.; jr., sr., grad.; prereq. 53) III TThS Monachesi
- 104w. **Police Problems and Practices in the United States.** A study of personnel, organization, and public relations of police forces with special attention to successful techniques of integrating police work with other community agencies (3 cred.; jr., sr., grad.; prereq. 1, 53 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor) VII MWF Vold
- Arch.104f. **City Planning.** General survey of the economic, governmental, social, and technical phases of city planning and group housing (3 cred.; jr., sr., grad.; no prereq.) III MWF Jones, Anderson, Caplow, Filipetti, Vaile
- 111w. **Population Trends.** This course emphasizes the cultural and social phases of population change with particular reference to birth rates, death rates, and migration. The implications of population change are also discussed (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) VII MWF Marshall
- 112s. **World Population Problems.** A study of population policy, both historical and present-day, in Europe, Asia, and other selected areas but with special emphasis on the United States. Some discussion is given to the field of population and power politics (3 cred.; sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) III MWF Marshall
- 115w. **Social Aspects of Housing and Standards of Living.** An analysis of the housing of the masses in relation to the problems arising in urban overcrowding, population distribution, and standard of living as affected by the distribution of national income, and the factors related to personal and social disorganization (3 cred.; sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) III TThS Caplow
- 116s. **Population Theory in the Scandinavian Countries** (3 cred.; jr., sr., grad.; prereq. 1 or consent of instructor) Ar. Ar. Ar.
- 117s. **Scandinavian Folk Movements: Their Social and Political Significance** (3 cred.; jr., sr., grad.; prereq. Soc. 1 or consent of instructor) Ar. Ar. Ar.

II. SOCIAL PSYCHOLOGY AND SOCIAL PROCESSES

- 120f. **Social Psychology.** Research and theory regarding the relation of the individual to social groups. Emphasis on the socialization process; effects of social interaction and isolation; individual behavior under conditions of social organization and disorganization; collective behavior in the crowd, the mass, the public, and the institution (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) I TThS Rose
- 120w. **Social Psychology** (See 120f) II TThS Rose
- 122w. **Sociology of Conflict.** Manifest forms of antagonism among groups of persons; causes of conflict; methods of resolving through accommodation; the role of conflict and social change (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) IV MWF Vold
- 123f,s. **Intergroup Relations.** Interaction of social and cultural groups in America. Processes leading to group contact; characteristics and contributions of ethnic groups in the 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 (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) III TThS Rose

- 124s. Social Mobility.** Relationship of social mobility to system of social stratification. Analysis of vertical and horizontal mobility. Relationship of social mobility to social organization. Social mobility in contemporary societies with special reference to the United States (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) II TThS Ar.

III. SOCIAL ORGANIZATION AND SOCIAL INSTITUTIONS

- 140w,s. Social Organization.** The 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 (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) II TThS Chapin

- 141f,w. The Family.** The evolution of the family: development of family unity or disunity, the roles of the several members of the family, methods of investigation of the family (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) IV TThS Johnson

- 141As. The Family** (For students in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine) (3 cred.; prereq. see 141f) IV TThS Johnson

- 142. Religion as a Social Institution** (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) (*Not offered in 1951-52*)

- 143. The Newspaper as a Social Institution** (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) (*Not offered in 1951-52*)

- 144w. Social Stratification.** Social stratification as a phase of social organization. Analysis of caste; estates, and social classes. Analysis of social stratification in contemporary societies with special reference to the United States. Socio-economic status and social stratification (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) II TThS Ar.

- 145s. Urban Sociology.** An introduction to the study of the city as a social organization. Emphasis is given to the analysis of urbanism as a way of life, and to the relationship between spatial and social configurations. A brief research project under supervision, using material drawn from the Twin Cities, is required (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in social science. Not open to students who have taken the old Courses 7 or 118) IV MWF Caplow

- 146f. Industrial and Occupational Sociology.** This course analyzes the occupational group, the factory and the business enterprise as social institutions, with particular attention to the contrasting functions of formal and informal organization, and to the significance of cooperation, authority, communication, status, and group norms in the working situation (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc., psy., pol. sci., or econ.) IV MWF Caplow

IV. RURAL LIFE AND WELFARE

- 160f. Rural Community Organization.** A study of the historical evolution, ecological characteristics and demography of the rural community; the social processes, stratification, assimilation, conflict, and cooperation as manifested in rural society (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) I MWF Nelson

- 161s. Rural Community Analysis.** Course offered on the St. Paul Campus and intended primarily for prospective rural teachers and extension workers. Emphasis placed on methods of making field studies of communities (3 cred.; sr., grad.; prereq. 1 and 15 cred. in soc. sci., and consent of instructor) VI T and VI-VII Th Marshall

- 162w,s. Rural Social Institutions.** Factors in the rural environment which condition the functioning of rural social institutions, including the family, school, church, local government, health and welfare (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) I MWF Nelson; IV MWF Nelson

148 COURSE OFFERINGS AND MAJOR REQUIREMENTS

V. THEORIES OF SOCIAL CHANGE AND SOCIAL ORDER

- 170f. **Analytical Social Theory.** Examination of the major problems of sociological theory; survey of main types of sociological theory (positivistic, rationalistic, idealistic); study of major theoretical concepts (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) IV MWF Martindale
- 171w. **Social Life and Cultural Change.** Examination of theories of social change with particular attention to their methodological problems. Materials drawn from the comparative social thought and structure of antiquity utilized as basic data for analysis (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) IV MWF Martindale
- 172s. **Backgrounds of Modern Social Thought.** Survey of major trends of social thought from the Renaissance to the nineteenth century with special attention to those factors contributing to the origin of sociology (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) IV MWF Martindale

VI. RESEARCH METHODS AND TECHNIQUES

- 180f. **Methods of Social Research.** A survey of major methods employed in social research including a consideration of their advantages and limitations when applied to specific types of problems (3 cred.; jr., sr., grad.; prereq. 45 or equiv.) III TThS Ar.
- 181s. **Problems in Rural Social Research.** A survey of methods currently used by students in investigating rural society; class reports on recent samples of rural research (2 cred.; sr., grad.; prereq. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor) VIII-IX M Nelson
- 182f. **Statistical Methods.** Selected problems of social relationship described, analyzed, and interpreted by means of the common statistical methods (3 cred.; grad.; prereq. 45 or equiv.) II TThS Chapin
- 183w. **Problems in Social Measurement.** A theoretical analysis of problems involved in measuring social variables, including a consideration of problems of reliability, validity, and standardization in the construction of new measuring instruments (3 cred.; jr., sr., grad.; prereq. 45 or 182 or equiv.) IV TThS Ar.
- 184f-185w-186s. **Field Work and Laboratory Training in Social Research.** Open to students whose records in statistical and research courses indicate ability to carry on individual research projects to advantage under supervision (6 to 9 cred.; jr., sr., grad.; prereq. 45 or 182 which may be taken simultaneously) Ar. Ar. Ar. Ar.

VII. RESEARCH SEMINARS

For Graduate Students Only

- 200f,w,* Seminar: **Research Problems in Criminology.** (Cred. ar.) VIII-IX Th Vold
- 200s.* Seminar: **Research Problems in Social Conflict.** (Cred. ar.) VIII-IX Th Vold
- 201f,w,s,* Seminar: **Research in Social Psychology.** (Cred. ar.) VIII-IX T Rose
- 202f,w,s,* Seminar: **Research in Urban Sociology.** (Cred. ar.) VIII-IX M Caplow
- 203f-204w-205s.* Seminar: **Research in Social Theory.** (Cred. ar.) VI-VII W Martindale
- 206f-207w-208s.* Seminar: **Statistical Theory in Relation to Social Theory and Practice.** (Cred. ar.) VIII-IX F Chapin
- 209f.* **Research Methods in Rural Sociology.** (Cred. ar.) Ar. Ar. Marshall
- 210w-211s.* Seminar: **Problems in Population Research.** (Cred. ar.) Ar. Ar. Ar.
- 215f.* **Research Seminar in Rural Social Policy.** (Cred. ar.) Ar. Ar. Nelson
- 216w.* **Research Seminar in the Rural Community.** (Cred. ar.) Ar. Ar. Nelson
- 217s.* **Research Seminar in Rural Social Theory.** (Cred. ar.) Ar. Ar. Nelson
- 218f,w,s,* Seminar in Methodological Problems in Sociological Research. (Cred. ar.) Ar. Ar. Ar.
219. Seminar: **Research in Problems of Modern Mass Society.** (Cred. ar.) (Not offered in 1951-52)
- 234f,w,s,* Seminar: **Research Seminar in Juvenile Delinquency and Treatment.** (Cred. ar.) IX-X T Monachesi
- 238f-239w,* **Principles of Sociology.** (3 cred. per qtr.) 3:00-5:30 p.m. M Monachesi
- 240f,w,s,* General Seminar. (Cred. ar.) Ar. Ar. Ar.

* These courses provide experience in written reports for Master's degree under Plan B.

SPANISH

See Romance Languages, page 136.

SPEECH AND THEATER ARTS

Department chairman—E. William Ziebarth

Major advisers in the College of Science, Literature, and the Arts—Professors Bryngelson, Gilkinson, and Ziebarth; Associate Professors Henrikson, Howell, and Whiting; Assistant Professors Fletcher, Graham, Lassman, Smith, and Thompson.

Major sequences in the College of Science, Literature, and the Arts—

A. General: Courses 51, 61, 65, 67 or 142, 71, 81, 106, 119, 169 and 9 additional Senior College credits in one of the following, exclusive of the minor department: Economics, English, History, Humanities, Philosophy, or Political Science. Prerequisites: Courses 1-2-3 or 5-6; 31-32; Psy. 1-2.

B. Theater: Courses 61, 81-82-83, 91, 92, 93, 111-112-113 and a comprehensive examination. Prerequisites: Courses 1-2 or 5; 31-32-33-34; Psy. 1-2.

C. Public Speaking and Discussion: Courses 55-56-57, 61, 101-102-103, 106, 126, 143, 169. Prerequisites: Courses 1-2-3 or 5-6; Psy. 1-2.

D. Radio: Courses 65, 66, 67, 78-79, 81-82-83, 117, 143. Prerequisites: Courses 1-2-3 or 5-6; 31-32; Psy. 1-2.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major advisers in the College of Education—Professors Bryngelson and Gilkinson; Associate Professor Whiting; Assistant Professors Graham and Donald K. Smith.

Requirements for a teacher's certificate—Major recommendation: Courses 1-2 or 5, 31, 32, 61, 67, 71-72-73, 81-82, 101-102, 119; total 41 or 42 credits. Psy. 4-5 is advised.

Minor recommendation: Students minoring in speech are required to take Ed.T. 75C, Sp. 1-2 or 5 plus other speech courses totaling 27 hours. These courses are to be selected with the aid of an adviser according to the needs of the student. Differential sequences are recommended according to whether the student is primarily interested in General Speech, Theater, Interpretation, Public Speaking and Discussion, or Radio.

For further information concerning teaching majors and minors and concerning the specialized curriculum in Speech Pathology, students should consult the *Bulletin of the College of Education*.

Speech majors in the College of Education may substitute the Language Arts Sequence with emphasis in speech. See the *Bulletin of the College of Education*.

Speech activities—All students in the University are entitled 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.

Note—The University maintains a clinical service for students with speech-hearing defects. Students who desire treatment should consult the director of the Speech and Hearing Clinic, 20 Shevlin Hall. The clinic also accepts a limited number of full-time out-patient stutterers who pay a fee of \$100 per seven weeks.

Junior College Courses

- 1f-2w.[†] Fundamentals of Speech.** Development of basic skills in speech: voice and action, oral reading, discussion, extemporaneous speaking (6 cred.; fr.,* soph., jr., sr.; no prereq.) I MWF; II MWF; III MWF; IV MWF; VI MWF; VII MWF; VIII MWF; I TThS; II TThS; III TThS; IV TThS Gilkinson, Smith and others
- 1w-2s.[†] Fundamentals of Speech** (See 1f-2w) II MWF; III MWF; IV MWF; VII MWF; VIII MWF; II TThS Gilkinson, Smith and others
- 1s. Fundamentals of Speech** (First qtr. of 1-2. See 1f-2w) II TThS; IV MWF; VI MWF Gilkinson, Smith and others
- 2f. Fundamentals of Speech** (Second qtr. of 1-2. See 1f-2w) III MWF Gilkinson, Smith and others
- 3f. Fundamentals of Speech.** A continuation of 1f-2w (3 cred.; fr.,* soph., jr., sr.; prereq. 1-2) II MWF Gilkinson, Smith and others
- 3w. Fundamentals of Speech** (See 3f) III MWF Gilkinson, Smith and others
- 3s. Fundamentals of Speech** (See 3f) I MWF; II MWF; III MWF; VI MWF; VII MWF Gilkinson, Smith and others
- 5f-6w. Fundamentals of Speech** (10 cred.; fr.,* soph., jr., sr.; no prereq.) III MTWThF; IV MTWThF; VI MTWThF Gilkinson, Smith and others
- 5w-6s. Fundamentals of Speech** (See 5f-6w) IV MTWThF; VI MTWThF; VII MTWThF Gilkinson, Smith and others
- 5s. Fundamentals of Speech** (First qtr. of 5-6. See 5f-6w) III MTWThF; IV MTWThF; VIII MTWThF Gilkinson, Smith and others
- 6f. Fundamentals of Speech** (Second qtr. of 5-6. See 5f-6w) V MTWThF; VI MTWThF Gilkinson, Smith and others
- 9f,w,s. Freshman Discussion and Debate.** Open to freshmen who win places on the Freshman Debate Squad (1 cred. by petition; fr. with C average; no prereq.) Ar. Ar. Byström
- 31f,s. Introduction to the Theater.** A course designed to acquaint the student with the theater of today. Readings and projects in various modern theater crafts (3 cred.; soph., jr., sr.; prereq. 1-2 or 5 or concurrent registration) II MWF Whiting
- 32f-33w. Beginning Acting, Creative Approach.** 32f: Creation and presentation of original scenes and skits. Ability to respond to the imaginative situation with sincerity, individuality, and effectiveness is stressed. 33w: Continuation of creative approach plus study in stage technique and in make-up (6 cred.; soph., jr., sr.; prereq. 31) II TThS Moulton
- 32w-33s. Beginning Acting, Creative Approach** (See 32f-33w) II MWF Whiting (w), Ar. (s); II TThS Ar.; III TThS Ar.
- 34f,s. Stagecraft—Construction and Painting.** Theory and practice in construction, painting, and shifting of stage scenery (3 cred.; soph., jr., sr.; prereq. 31) II T and I-II ThS Walker

Senior College Courses

Courses 51, 67, 97 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

- 51s. Advanced Public Speaking.** Preparation and delivery of speeches on current public issues (3 cred.; jr., sr.; prereq. 1-2 or 5) III MWF Smith
- 55f-56w-57s. Speech Writing and Platform Speaking.** Essentials of voice production and of effectiveness in delivery. The elements of oral style. Written speeches; practice in delivery (9 cred.; jr., sr.; prereq. 1-2 or 5) III MWF Gilkinson; VII MWF Gilkinson
- 61f,s. Personal Development through Speech.** A study of behavior as indicated through speech; speech symptoms evaluated from cause and effect relations; psychologic factors in speech; analysis of individual problems of self-consciousness, stage fright; speech as a means of self-control as applied to teacher and pupil (3 cred.; jr., sr.; prereq. 1-2 or 5; Psy. 1-2) III MWF Bryngelson

* Open to a limited number of freshmen with the approval of their advisers and the Department of Speech.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

- 65f,w,s. Radio and Television Speech.** Speech arts and psychology of the radio. Practice, exercises, projects, and reports on problems of appeal and audience response (3 cred.; jr., sr.; prereq. 1-2 or 5) II MWF Ziebarth
- 66f,w,s. Radio Drama.** A study of the historical development of radio drama, with an analysis of the various types of radio dramas including production, direction, and acting techniques (3 cred.; jr., sr.; prereq. 1-2 or 5; 65 recommended) IV MWF Ar.
- 67f,w,s.** Phonetics.** The study of English speech sounds as they occur separately and in connected speech. Strong and weak forms, stress, assimilation. Practice in ear training (3 cred.; jr., sr.; prereq. 1-2 or 5) I MWF (f); VIII MWF (w); I MWF (s) Fletcher
- 71f-72w-73s. Play Production: Problems of Dramatic Production in the Secondary School.** Primarily for students in the College of Education (9 cred.; jr., sr.; prereq. 1-2 or 5, 31, 32) IV MWF Graham (f,s), Walker (w)
- 78f-79w. Advanced Acting.** Characterization styles of acting, dialect, and stage technique. Presentation of scenes from great plays (6 cred.; jr., sr.; prereq. 31, 32) II MWF Graham
- 78w-79s. Advanced Acting (See 78f-79w)** III MWF Graham
- 81f-82w-83s.|| Interpretative Reading.** Esthetic theory of literature and of oral reading. Practice in reading for interpretation and mastery of technique (9 cred.; jr., sr.; prereq. 1-2 or 5) IV MWF Thompson; VI MWF Ar.
- 81w-82s.|| Interpretative Reading (First two qtrs. of 81-82-83. See 81f-82w-83s)** III TThS Ar.
- 83f.|| Interpretative Reading (Third qtr. of 81-82-83. See 81f-82w-83s)** III TThS Ar.
- 91w. Stage Design.** Theory and practice of designing scenery as a functional environment for the stage play (3 cred.; jr., sr.; prereq. 31) III TThS and IV TS Walker
- 92s. Stage Lighting.** Theory and practice in applying methods and principles of lighting in the theater (3 cred.; jr., sr.; prereq. 31) III TThS and IV TS Walker
- 93f. Stage Costuming (3 cred.; jr., sr.; prereq. 31)** III TThS and IV TS Moulton
- 97f,w,s. Intercollegiate Oratory and Debate.** Open to the student who represents the University in the annual contest of the Northern Oratorical League and to students who win places on the intercollegiate debate squad (1 to 3 cred. by petition; soph., with C average, jr., sr.; no prereq.) Ar. Ar. Howell
- 101f-102w-103s. Argumentation and Persuasion.** Theories of modern motivational rhetoric. Analysis of persuasive speaking; practice in preparation and delivery of oral argument (9 cred.; jr., sr., grad.; prereq. 1-2 or 5; Psy. 1-2; 10 cred. in soc. sci.) III MWF Howell; VI MWF Howell
- 105s.* Theory of Reading and Acting.** Literature as an art; its various forms; the psychology of the creative imagination; speech elements in literature; origins and nature of speech symbols and technique of their use. Collateral readings, problems, reports, term papers (3 cred.; jr., sr., grad.; prereq. 1-2 or 5, 81-82-83, and Psy. 1-2) III TThS Thompson
- 106f,w,s. Discussion.** Cooperative thinking; recognition and definition of problems, critical analysis, examination of possible solutions. Planning, preparing for, participating in, and leading classroom, public, and radio discussions (3 cred.; jr., sr., grad.; prereq. 1-2 or 5) VII MWF Howell
- 107. Platform Reading.** An advanced course in the oral reading of selected great plays. Speech melody, rhythm, platform technique. Problems in esthetic analysis. Lecture recitals (3 cred.; jr., sr., grad.; prereq. 81-82-83 with a grade of B in 83) (*Not offered*)
- 109.* Classical Rhetoric (3 cred.; jr., sr., grad.; prereq. 101-102-103, Psy. 140) (Not offered in 1951-52)**
- 111f-112w-113s. Stage Direction.** 111f: Theory of direction and preparation of the prompt book with exercises in blocking; 112w: Rehearsal problems and the direction of two one-act plays; 113s: Problems of management and staging; the direction of a full length play (9 cred.; sr., grad.; prereq. 31, 32-33, 34, 91-92-93 and consent of instructor) III MWF Whiting
- 115f-116w. Playwriting and Production.** Creative practice in the problems of dramatic form and content. Two original one-act plays fall quarter, one full-length play winter quarter. The best plays will receive production in the University Theatre (3 cred. per qtr.; sr., grad.; prereq. 31, 32-33 or permission of instructor) II MWF Thompson
- 117s. Writing Radio Drama.** The problems and techniques of aural drama, illustrated by the writing of an original radio drama through the stages of scenario, rough draft, and final draft (3 cred.; sr., grad.; prereq. 31, 32 and permission of instructor) II MWF Thompson

* Courses 105 and 109 are offered in alternate years.

† Speech 81 must be taken first.

** Students intending to take Speech Pathology should take Phonetics the preceding spring.

152 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 119f. **Introduction to Speech Correction.** Basic orientation in speech correction. Analysis of common disorders of speech, their characteristics, prevention, and elimination. Designed as a basis for more advanced study in speech pathology or for a basic understanding of the field (3 cred.; jr., sr., grad.; prereq. 1-2 or 5) II TThS Henrikson
- 122f. **Introduction to Research.** Graduate research in speech: selections of topics and methods of investigation. Required of all graduate majors in speech (3 cred.; sr., grad.; prereq. 1-2 or 5, Psy. 1-2) II TThS Gilkinson
- 124w. **Experiments in General Speech.** An examination of studies of the correlates of speech skills, audience reactions, and speech improvement (3 cred.; jr., sr., grad.; prereq. 1-2 or 5, Psy. 1-2) II TThS Gilkinson
- 126s. **History and Criticism of Public Address.** An examination of historical and critical studies of oratory. The study of orators: education and training, style, speech composition, topics and issues, historical settings (3 cred.; jr., sr., grad.; prereq. 1-2 or 5, Psy. 1-2) II TThS Gilkinson
- 131w. **Creative Dramatics.** Studies in the principles and methods of developing original dramatizations with children. Observation of children's classes in creative dramatics. Readings, projects, term papers (3 cred.; jr., sr., grad.; prereq. 31 or elementary education major, or consent of instructor. Ed.C.I. 63 recommended) VI MWF Graham
- 132s. **Children's Theater.** Studies in the theory and practice of selection, direction, and production of plays for children's audiences, coordinated with current productions of the Young People's University Theatre (3 cred.; jr., sr., grad.; prereq. 31 or consent of instructor) VI MWF Graham
- 141f. **Anatomy and Physiology of the Voice Mechanism.** Consideration of respiration, articulation, and phonation. Practical applications to speech improvement (3 cred.; jr., sr., grad.; prereq. 1-2 or 5, 67; Psy. 1-2 and 4-5 or consent of instructor) VII MWF Fletcher
- 142w. **The Physical Bases of Speech.** Relationship of basic principles of sound to speech mechanism. Analysis of speech sound production (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, 67, Psy. 1-2 and 4-5 or consent of instructor) VII MWF Fletcher
- 143s. **Speech Instrumentation.** Application of mechanical and electronic equipment to speech; basic theory and uses (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, 67, Psy. 1-2 and 4-5 or consent of instructor) VII MWF Fletcher
- 152f. **Hearing Disorders.** Basic orientation to audiology. Physiology and anatomy of auditory mechanism. Symptomatology and pathology of hearing disorders, their medical and surgical treatment. Clinical and classroom management, including discovery programs, hearing aids, language development, lip reading, speech correction, auditory training, psychology of hard-of-hearing and deaf, vocational guidance, educational channels (3 cred.; jr., sr., grad.; prereq. 1-2 or 5, 61, 67, Psy. 1-2 or permission of instructor) IV MWF Lassman
- 153w. **Audiometry and Hearing Aids.** Theory and practice of clinical and group audiometry; screening and diagnostic techniques, pure tone and speech audiometry; hearing conservation programs. Characteristics of modern hearing aids; selection and usage problems (3 cred.; jr., sr., grad.; prereq. 1-2 or 5, 61, 67, 152, Psy. 1-2 or permission of instructor) IV MWF Lassman
- 155s. **Lip Reading and Lip Reading Methods.** A study of the positions and movements involved in English speech and the current methods used in teaching lip reading (3 cred.; prereq. 1-2 or 5; 61, 67; Psy. 1-2; or permission of instructor) IV MWF Lassman
- 162w-163s.[†] **Speech Pathology.** 162w: Neurology of speech. Stuttering and its associated symptoms. Relation of sidedness and speech disorders, heredity, current theories of stuttering, types of treatment; 163s: Physiologic and psychologic aspects of organic and functional speech problems. Articulatory disorders. Diagnosis and treatment (6 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6; 61, 67, 85) VI T and VI-VII Th Bryngelson (w), Henrikson (s)
- 164f-165w-166s.[§] **Clinical Methods and Practice in Speech Pathology** (9 cred.; sr., grad.; prereq. 1-2 or 5; 61, 67, 119, 162, or 163 which may be taken simultaneously with 163) VII-VIII W and Ar. Bryngelson
- 169w. **Speech and Language in Human Behavior.** Basic orientation in the place of speech and language in human behavior. Individualized projects and collateral reading (3 cred.; jr., sr., grad.; prereq. consent of instructor) VIII MWF Henrikson

[†] To receive credit for any part of this course a student must complete the parts preceding the dagger.

[§] Students may not receive credit for this class if they have taken Ed.C.I. 174-175-176.

- 171f-172w-173s. History of the Theater.** A study of the plays, arts and crafts of the theater from their beginnings to the present. Special reports and projects (9 cred.; sr., grad.; prereq. 1-2 or 5; 31) VII T and VI-VII Th Graham
- Scand.171f.* Ibsen and the Beginnings of the Modern Drama** (3 cred.; jr., sr., grad.; prereq. Scand. 4-5-6 or 10-11-12 or 8 cred. in lit.) IV MWF Gustafson
- Scand.172w.* Strindberg and the Drama in Revolt and Transition** (3 cred.; jr., sr., grad.; prereq. Scand. 4-5-6 or 10-11-12 or 8 cred. in lit.) IV MWF Gustafson
- Scand.173s.* The Contemporary Scandinavian Theater** (3 cred.; jr., sr., grad.; prereq. Scand. 4-5-6 or 10-11-12 or 8 cred. in lit.) IV MWF Gustafson
- 174-175-176. Theater Backgrounds.** A study of playwrights from Aeschylus to the present day with emphasis on the theatrical effectiveness of their plays (9 cred.; sr., grad.; prereq. 1-2 or 5; 31. Courses in literature recommended) (*Not offered in 1951-52*)
- 181f-182w-183s. Readings in Speech.** Directed reading and preparation of reports on selected subjects (Cred. ar.; jr., sr., grad.; prereq. 1-2 or 5 and 6 additional credits and consent of instructor) Ar. Ar. Bryngelson, Gilkinson, Graham, Henrikson, Howell, Thompson, Whiting, Ziebarth, Smith, Lassman, Fletcher
- Eng. 184f-185w-186s. The Interpretation of the Drama** (9 cred.; jr., sr., grad.; prereq. 6 cred. in English lit. exclusive of A-B-C and classics, Eng. 55-56 recommended) IX-X W Ar.
- 191f-192w-193s. Technical Stage Problems.** Advanced problems in design and construction; stage management, color effects, and wiring. Special problems assigned to individual students (9 cred.; jr., sr., grad.; prereq. 111-112-113) VII M and VII-VIII MW Whiting

For Graduate Students Only

- 201f,w,s. General Seminar.** Ar. Ar. Staff
- 203f-204w. Debate Coaching.** Study of literature concerning and methods of directing extracurricular interscholastic public speaking, discussion and debate activities. Each seminar member directs the preparation and practice of a group of undergraduate student speakers (2 cred. per quarter.; prereq. 1-2 or 5, 101-102-103, Psy. 1-2, 10 cred. in soc. sci.) Ar. Ar. Howell
- 207f-208w-209s. Seminar in Rhetoric and Persuasion.** Ar. Ar. Howell
- 211f-212w-213s. Seminar in Dramatic Theory.** Ar. Ar. Thompson
- 221f-222w-223s. Seminar in Oral Interpretation of Literature.** Ar. Ar. Ar.
- 231f-232w-233s. Seminar in Advanced Speech Problems.** Ar. Ar. Gilkinson
- 241f-242w-243s. Seminar in Radio Research.** Ar. Ar. Ziebarth
- 251s. Seminar in Listening Comprehension.** Ar. Ar. Nichols
- 261f-262w-263s. Seminar in Speech Pathology.** Ar. Ar. Henrikson
- 271s. Seminar in Hearing.** Ar. Ar. Lassman
- 281f-282w-283s. Seminar in Organic Disorders of Speech.** (2 cred. per qtr.) Ar. Ar. Brown
- 291f-292w-293s. Research in Special Problems.** Ar. Ar. Bryngelson, Fletcher, Gilkinson, Graham, Henrikson, Howell, Thompson, Whiting, Ziebarth

SWEDISH

See Scandinavian, page 141.

PREPARATION FOR THEOLOGICAL TRAINING

The attention of students intending to enter theological seminaries or to take other special training for religious work is drawn to the following interdepartmental (or liberal arts) major:

1. Philosophy 50-51-52. General History of Philosophy (15 cred.)
2. Nine credits from these courses in philosophy:
 - 106-107. Plato (6 cred.)
 - 114. Introduction to American Philosophy; Puritanism to Pragmatism (3 cred.)
 - 180. History of Religions (3 cred.)
 - 181. Psychology of Religion (3 cred.)
 - 182. Philosophy of Religion (3 cred.)
3. Nine credits from these courses in history:
 - 65-66-67. Medieval European History (9 cred.)
 - 65a-66a-67a. Renaissance and Reformation (9 cred.)

* No knowledge of Scandinavian language is required.

4. Eighteen credits from the following group: 9 cred. in Senior College Greek; 9 cred. in Senior College psychology; 9 cred. in Senior College economics; 9 cred. in Senior College sociology, including Soc. 142 (Religion As a Social Institution)
5. Nine additional Senior College credits, making a total of 60 credits in Senior College courses.

Note—Several theological seminaries have suggested that students take courses in literature, especially English literature, either in the Junior College or as electives in the Senior College. Attention is also called to courses in humanities.

Students interested in this program may consult with Mr. Conger (Room 100 Wesbrook Hall) or with Mr. Holmer (Room 110 Wesbrook Hall).

ZOOLOGY

Department chairman—Dwight E. Minnich

Major adviser in the College of Science, Literature, and the Arts—Professor Minnich.

Major sequence in the College of Science, Literature, and the Arts—27 credits in Senior College courses of which at least 18 must be in courses with numbers between 49 and 100.

Preparation for major: 1-2-3 or equivalent and 21, 22, or equivalent. If possible beginning chemistry and at least one year of French or German should be completed during Junior College work.

Major adviser in the College of Education—Professor Palmer O. Johnson.

For the specialized curriculum in Natural Science see *College of Education Bulletin*.

For a course in General Biology see Department of General Studies, page 72.

Junior College Courses

- 1f-2w-3s,† **General Zoology.** Structure, physiology, embryology, classification, and evolution of animals (10 cred.; no prereq.) Lect. II TTh Minnich; IV WF Minnich; VII TTh Olson; lab. sections: I-II MF; III-IV MF; V-VI MF; VII-VIII MF; III-IV TTh 14f-15w,† **General Zoology.** Structure, physiology, embryology, classification, and evolution of animals (For students of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine, School of Nursing, and College of Pharmacy) (6 cred.; no prereq.) Lect. VII TTh Dawson; lab. sections: V-VI TTh; VIII-IX TTh 21f,§ **Histology.** Microscopic structure of the tissues and organs (5 cred.; soph., jr., sr.; prereq. 1-2-3) Lect. I TThS Olson; lab. sections as follows: II-IV TTh‡; VI-VIII TTh 22w. **Comparative Anatomy.** Comparative study of vertebrate systems tracing the development of the various structures from the lowest forms to man (5 cred.; soph., jr., sr.; prereq. 1-2-3) Lect. III TThS Eddy; lab. sections: VI-VIII TTh; III-IV MWF

Senior College Courses

Courses 50, 51, 52, 53, 81, 82, and 83 are open to sophomores who have a grade of at least C in Course 1-2-3. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 24.

50s,§ **Introduction to General Physiology.** Comparative physiology of cells and cell systems. Physics and chemistry of protoplasm (5 cred.; soph., jr., sr.; prereq. 1-2-3 or 15 cred. in bot.; and 10 cred. in chem. or permission of instructor) Lect. III TThS Steinbach; lab. sections as follows: I-II TThS; IV-V TThS; VI-VIII TTh

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ Not open to regular three-year premedical and predental students.

§ All zoology majors should register for this section.

- 51f. Introductory Animal Parasitology.** An elementary course dealing with parasitic protozoa, worms and arthropods, and their relation to diseases of man and animals (5 cred.; jr., sr.; prereq. 1-2-3) Lect. VI MWF Wallace; lab. sections as follows: I-II MWF; III-IV MWF; VII-VIII MWF
- 52w. Introductory Entomology.** General morphology, life histories, habits, and classification of insects (5 cred.; jr., sr.; prereq. 1-2-3) Lect. VIII MWF Mickel; lab. sections as follows: VI-VII MWF; IX-X MWF
- 53s. Fauna of the Central United States.** A study of the identification, classification and life histories of common land and fresh-water animals exclusive of insects and birds (5 cred.; jr., sr.; prereq. 1-2-3) Lect. VIII MWF Eddy; lab. sections as follows: VI-VII MW and VI-IX F; IX-X MW and VII-X F
- 57w-58s.^t Introductory Ornithology.** A laboratory and field course in the structure, classification, distribution, migration, habits, habitats and identification of the birds of this region (6 cred.; jr., sr.; prereq. 1-2-3 or 14-15) Lect. VII TTh Warner; lab. sections as follows: V-VI TTh*; VIII-IX TTh
- 59w.^s General and Comparative Embryology.** A study of the embryological development of invertebrate and vertebrate forms (5 cred.; jr., sr.; prereq. 1-2-3 or equiv.) Lect. I TTh; conf. II S or III S; lab. sections as follows: II-IV TTh; VI-VIII TTh
- Ent.63w. Mammalogy.** Distinguishing characteristics and life histories of the various mammal groups, particularly those represented in the state. Consideration is given to the possibilities of fur farming in case of certain species (4 cred.; jr., sr.; prereq. Zool. 22) Lect. II MWF Beer; lab. sections as follows: I-II ThS; IV-V ThS
- 81s. Invertebrate Zoology.** A review of the invertebrate phyla with emphasis on structure and general classification (3 cred.; jr., sr.; prereq. 1-2-3) Lect. II WF; lab. I-II TTh Dawson
- 82w. Organic Evolution.** History, opposition, evidence, causes, conclusion (3 cred.; jr., sr.; prereq. 1-2-3 or Bot. 1-2-3) II MWF Dawson
- 83f,s. Introduction to Genetics and Eugenics.** The genetic principles derived from experimentation with both plants and animals are considered, together with their application to practical problems, including those of human society (3 cred.; jr., sr.; prereq. 1-2-3 or 10 cred. in bot.) II MWF Reed (f), Merrell (s)
- 107-108. Protozoology.** A survey of the free-living protozoa: structure, classification, identification; physiology, reproduction, life histories; genetics and morphogenesis (6 cred.; jr., sr., grad.; prereq. 15 cred.) (Not offered in 1951-52)
- 109w. Sense Organs.** A survey of the structure and function of the sense organs of invertebrate and vertebrate animals (3 cred.; jr., sr., grad.; prereq. 15 cred. and consent of instructor) Lect. and demonstrations IV MWF Minnich
- 110s. Animal Reactions.** A survey of the nervous system, effectors and behavior patterns of animals (3 cred.; jr., sr., grad.; prereq. 15 cred. and consent of instructor) Lect. and demonstrations IV MWF Minnich
- 112f. Advanced General Physiology.** Interactions between cell and environment; enzyme action and general protoplasmic structure and metabolism (3 cred.; jr., sr., grad.; prereq. 15 cred. with consent of instructor) Lect. VI MF Steinbach; lab. VI-IX W
- 113w. Special Topics in Advanced General Physiology** (3 cred.; jr., sr., grad.; prereq. 15 cred. with consent of instructor) Lect. VI MF Steinbach; lab. VI-IX W
- 117f. Animal Ecology.** General ecology stressing ecological principles and land communities (3 cred.; jr., sr., grad.; prereq. 15 cred. in zool. or ent.) Lect. VI-VII TTh; lab. VIII TTh Eddy
- 118w. Animal Ecology.** Experimental approach to the study of environmental factors affecting animal populations (3 cred.; jr., sr., grad.; prereq. 15 cred. in zool. or ent. and consent of instructor) Lect. VI TTh; lab. VII-VIII TTh Hodson
- 120s.^g General Ecology of Insects.** Ecology with special reference to insects, their dispersal, distribution, abundance, natural control, and related problems (3 cred.; jr., sr., grad.; prereq. 15 cred. in zool. or ent.) Lect. VI TTh; lab. VII-VIII TTh Hodson

* After mid-April this section will meet with Section 2, VIII-IX TTh.

^t To receive credit for any part of this course a student must complete the parts preceding the dagger.

^s Not open to regular three-year premedical and predental students.

^g Either 119su or 120s or both may be taken to complete Courses 117f, 118w.

156 COURSE OFFERINGS AND MAJOR REQUIREMENTS

- 121f. Ichthyology.** A study of the taxonomy and habits of North American fishes with special reference to those of upper Mississippi drainage (3 cred.; jr., sr., grad.; prereq. 15 cred.) Lect. IX-X F Eddy; lab. sections as follows: VII-VIII MW; IX-X MW
- 125f-126w-127s. Advanced General Entomology.** Morphology, biology, and classification of insects (9 cred.; jr., sr., grad.; prereq. 15 cred.) Lect. I TTh Mickel; lab. I-III S
- 128f-129w. Insect Physiology.** General and comparative physiology of insects, a survey of the organ systems and their functioning in various insects (8 cred.; jr., sr., grad.; prereq. 15 cred. in zool. or ent. and consent of instructor. Zool. 50 or equiv. recommended) Lect. VI WF; lab. VII-IX WF Richards
- 140s. Biological Microscopy.** Necessary elements of optics, use and limitations of the various types of microscopes, interpretation of microscopical data. Lab.: demonstrations plus project in field of student's interest (4 cred.; sr., grad.; prereq. 15 cred. in zool., ent., or bot. Permission of instructor required) Lect. VI WF; lab. VII-IX WF Richards
- 144f. Medical Entomology.** A study of the principal arthropods noxious to man and animals. Special emphasis is placed on those arthropods which serve as vectors of pathogenic organisms of man and animals (3 cred.; jr., sr., grad.; prereq. 15 cred. including 52 or equiv. and consent of instructor) Lect. and lab. VII-IX TTh Burroughs
- 145w. Parasitic Protozoa.** The structure, life histories, and economic relations of protozoal parasites of man and animals. Laboratory diagnosis (3 cred.; jr., sr., grad.; prereq. 15 cred. and consent of instructor) Lect. and lab. VII-IX TTh Wallace
- 146s. Helminthology.** Worm parasites of man and animals, their structure, life histories, and biological relationships (3 cred.; jr., sr., grad.; prereq. 15 cred. and consent of instructor) Lect. and lab. VII-IX TTh Wallace
- 149-150. Histology and Organology.** Comparative study of the microscopic structure of tissues and organs (6 cred.; jr., sr., grad.; prereq. 15 cred. in zool.) (Not offered in 1951-52)
- 160f-161w-162s. Cytology.** A survey of cell structure and behavior with special reference to genetic cytology and cellular physiology (9 cred.; jr., sr., grad.; prereq. 15 cred. with consent of instructor) Lect. and lab. VI-VIII TTh Ar.
- 170f. Advanced Genetics.** General laws involved in heredity and variation, with their applications to micro-organisms, higher plants and animals exclusive of man (3 cred.; jr., sr., grad.; prereq. 15 cred. including 83, or consent of instructor) Lect. and lab. VII-IX MW; VII-IX TTh Reed, Merrell
- 171w. Genetics of Speciation** (3 cred.; jr., sr., grad.; prereq. 15 cred. including 83, or consent of instructor) VII MWF; IX MWF Reed, Merrell
- 175s. Human Genetics.** A study of the inherited characters in man, particularly in relation to medicine with some reference to the relation of genetics to marriage and to social conditions (3 cred.; jr., sr., grad.; prereq. 83 and consent of instructor) IX MWF Reed
- 182s. Experimental Embryology.** Growth, differentiation and metabolism of developing organisms (5 cred.; sr., grad.; prereq. 50 and 59 or equiv. and consent of instructor) Lect. and discussion III-IV TTh; lab. ar. Spratt
- 183-184f-185. Physiology of Development.** Designed to train advanced students in the organization, presentation and evaluation of the results of research in experimental embryology. 183: Chemical embryology, metabolic aspects of growth, differentiation and morphogenesis; 184f: Embryonic differentiation, including neuroembryology; 185: Endocrines in development, including sex-differentiation (4 cred. per qtr.; sr., grad.; prereq. 182 or equiv. and consent of instructor) (183 will be offered in the fall of 1953-54, 184 in the fall of 1951-52, and 185 in the fall of 1952-53) Ar. Ar. Spratt
- 197f-198w-199s. Problems.** Advanced work in some special line (Cred. ar.; jr., sr., grad.; prereq. 1-2-3, special requirements) Ar. Ar. Ar.

For Graduate Students Only

- 100f-101w-102s. Zoological Techniques**
- 201f-202w-203s. Research in Entomology**
- 211f-212w-213s. Research in Ecology**
- 217f-218w-219s. Research in Physiology**
- 221f-222w-223s. Research in Biophysics**
- 229f-230w-231s. Research in Histology**

- 233f-234w-235s. Research in Embryology
- 237f-238w-239s. Research in Cytology
- 241f-242w-243s. Research in Protozoology
- 251f-252w-253s. Research in Genetics
- 261f-262w-263s. Research in Parasitology
- 291f-292w-293s. General Seminar
- 296f-297w-298s. Special Seminar in Special Research Fields

BIOPHYSICS

Zool.155,*156w,157.* Biophysics. A survey of the theoretical and experimental aspects of biology which can be studied by quantitative physical means. 155: Surveys tissue ultrastructure (biostatics) as revealed by hypermicroscopy, birefringence, X-ray, electron and radioactive means, and by colloidal and micellar phenomena; 156w: Studies the dynamics of biophysical systems; excitatory state, contraction, secretion, synthesis; 157: Examines integrative biophysical systems; stability of systems, transmission of intelligence, sensory mechanisms (3 cred. per qtr.; jr., sr., grad.; prereq. 28 cred. distributed between physics and biology and permission of instructor. Physical chemistry and general physiology recommended. Any section of this course may be taken separately) Ar. Ar. Schmitt

ENTOMOLOGY AND ECONOMIC ZOOLOGY

Students in this college may elect courses in Entomology and Economic Zoology by arrangement with the department, but before registering for any courses they should get the approval of the Students' Work Committee. See the *Bulletin of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine*.

* The schedule for this course is uncertain. Students wishing to take it should consult the department.

Section III

PREPROFESSIONAL CURRICULA IN SCIENCE, LITERATURE, AND THE ARTS

As explained on page 5 of this bulletin, many students enter the College of Science, Literature, and the Arts in order to secure the essential foundation for entrance into a professional school. The preprofessional work consists of courses particularly related to the field of ultimate interest together with courses of a broadening general education nature.

It is essential that the student study the preprofessional requirements for the field of his choice very carefully if he is to continue his college career without loss of time. Detailed outlines of the curricula in the College of Science, Literature, and the Arts which are prerequisite for entrance into the various professional schools are presented below.

A. UNIVERSITY COLLEGE

An administrative unit known as the University College has been created under a committee which may register students who find they must cross college lines to obtain a program fulfilling their needs. Any student who finds that his needs cannot be satisfied by the program in any one college of the University should call at 225 Johnston Hall to make an appointment to see the chairman of the committee, Prof. J. W. Buchta, who also serves as assistant dean for the Senior College.

Admission to University College is based on the previous record of the student and the program proposed by the student. The program may contain courses in any college or division 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 chairman of the committee.

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

B. SCHOOL OF ARCHITECTURE—SIX-YEAR COURSE*

This curriculum is intended for students who wish to combine with their professional training more general education than is offered by the five-year professional curriculum in architecture. It leads normally to the bachelor of arts degree with a major in architecture at the end of four years and the bachelor of architecture degree at the end of six years.

The work of the first four years constitutes a modified version of the curriculum prescribed for the Science, Literature, and the Arts 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 two years' work may be taken at the University of Minnesota in the Junior College of Science, Literature, and the Arts, or at other accredited institutions. During this period the student should complete the requirements for entrance to the Senior College of Science, Literature, and the Arts as stated on page 10.

* 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.

These requirements should include the following:

High school or college equivalents of Math. 1, Higher Algebra and Solid Geometry. Inorganic Chemistry 1-2 or 6-7 if the student does not have high school credit for chemistry.

Math. 6, 7, 30, Trigonometry, Algebra, and Analytic Geometry (15 credits)

Phys. 1a-2a-3a, Introduction to Physical Science (12 credits)

Art 23A-24A-25A, Drawing and Design I (6 credits)

Approved electives to make a minimum total of 90 credits.

Third and Fourth Years

During these years the student is registered in the Senior College of Science, Literature, and the Arts as a candidate for the bachelor of arts degree with a major in architecture. To register as such, the student must secure the approval of the School of Architecture. The required application forms may be obtained from either the School of Architecture or the Office of Admissions and Records. They must be submitted not later than July 15 preceding the beginning of the academic year for which admission is sought. The following courses should be included:

	Credits
Arch.AD-I, AD-II Architectural Design I and II	36
Arch.51-52-53 History of Architecture	12
Art 60A-61A-62A Drawing and Design II	6
M.&M.91-92-93 Calculus, Mechanics, Strength of Materials	12
C.E.38-39-41 Structural Theory	9
or	
Arch. 7-58-59 Building Materials and Methods	12

Approved electives and minor sequences to make a minimum total of 180 credits acceptable for the bachelor of arts degree.

Fifth and Sixth Years

During these years the student is registered in the Institute of Technology as a candidate for the bachelor of architecture degree. To register as such, the student must secure the approval of the School of Architecture and transfer to the Institute of Technology. Application must be made as prescribed above for admission to the third and fourth years' work. The following courses should be included: C.E. 38-39-41 (Structural Theory, 9 credits) or Arch. 57-58-59 (Building Materials and Methods, 12 credits); Arch. AD-III (Architectural Design, 45 credits); Arch. AD-IV (Thesis, 12 credits); Arch. 71-72-73 (Building Equipment, 6 credits); Arch. 104 (City Planning, 3 credits); Arch. 105 (Professional Relations, 3 credits); additional approved electives to make a minimum total of 270 credits for the two degrees.

C. SCHOOL OF BUSINESS ADMINISTRATION*

The purpose of the Prebusiness Curriculum is to combine an opportunity for some liberal education with preliminary basic courses in economics. In recognition of the widening social responsibility of business management, the student is urged to elect courses in several fields in addition to fulfilling the following requirements.

To be eligible for admission to the School of Business Administration, the student must present ninety credits, in addition to credits given for physical education, earned in a recognized college or university with a scholarship average of C or a smaller number of earned credits which, together with quality credits, will total a minimum of ninety. One quality credit is granted for every five honor points in excess of the number necessary for a C average.

Quality credits earned in the Junior College may be applied only toward the ninety credits required for admission to the School of Business Administration. In other words, a student who has a surplus of honor points above the number required to complete 90 credits may not use these for credit in the School of Business Administration. Any excess credits other than quality credits, however, may be applied toward electives in the School of Business Administration.

* 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.

The School of Business Administration offers courses leading to the degrees of *bachelor of business administration* and *bachelor of science in economics*. Students preparing to enter the school in pursuit of either of these degrees must satisfy prebusiness requirements as specified below.

A. Junior College Requirements for Admission to Sequences Leading to the Degree of Bachelor of Business Administration

English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. Twelve credits in Communication (Com. 1-2-3) will satisfy the English requirement.

Nine credits in mathematics or one of the following laboratory sciences: botany, chemistry, geology, physics, zoology, or psychology with laboratory. Fifteen credits in Orientation in the Natural Sciences (Nat.Sci. 1-2-3) or 10 credits in The Physical World (Nat.Sci. 4-5-6) or 10 credits in General Biology (Nat.Sci. 7-8-9) will satisfy the science requirement.

Eight credits in one of the following social sciences: anthropology, geography, history, political science, sociology or 12 credits in Soc.Sci. 1-2-3 taken at the University of Minnesota†.

Ten credits in Principles of Economics (Econ. 6-7)

Sufficient electives to complete the minimum of ninety credits required for admission. Entering freshmen are urged to take Business History (Econ. 1-2).

The following three courses should, if possible, be taken during the sophomore year for they are prerequisite to certain courses in the core group:

Elements of Money and Banking (Econ. 3)

Elements of Statistics (Econ. 5)§

Principles of Accounting (Econ. 24-25-26)¶

Students who do not elect the above courses in money and banking, statistics, and accounting during the sophomore year may substitute the following after entrance to the School of Business Administration:

Money and Banking (B.A. 57); Statistics Survey (B.A. 70); Elementary Accounting: Combined Course (B.A. 54-55)

In addition certain courses are required in special sequences in the school. These course prerequisites should be included in the Junior College program wherever possible. The major sequences and special course prerequisites are as follows:

Accounting: Mathematics of Investment (Math. 20) (prereq. Math. 8, or 6 and 7, or 15 and 16)

Advertising: General Psychology (Psy. 1-2)

Retail Store Training: General Psychology (Psy. 1-2); Typewriting (Econ. 32-33)

Foreign Trade: General Psychology (Psy. 1-2); 9 credits in political science; reading knowledge of a foreign language

Finance: Mathematics of Investment (Math. 20) (prereq. Math. 8, or 6 and 7, or 15 and 16)

Industrial Administration: See Bulletin of the Institute of Technology

Industrial Relations: General Psychology (Psy. 1-2)

Insurance: General Psychology (Psy. 1-2); Mathematics of Investment (Math. 20) (prereq. Math. 8, or 6 and 7, or 15 and 16)

Merchandising and Selling: General Psychology (Psy. 1-2)

Office Management: General Psychology (Psy. 1-2); Typewriting (Econ. 32-33-34)

Secretarial and Supervisory Training: General Psychology (Psy. 1-2); Typewriting (Econ. 32-33-34); Shorthand (Econ. 37-38-39)

Traffic and Transportation: General Psychology (Psy. 1-2); Geography of Commercial Production (Geog. 41)

Distribution of Courses

Of the required and elective courses in economics, Economics 1-2, which is strongly recommended but not required, belongs in the freshman year; Economics 3 may be taken in the freshman year (to make with

† Social Statistics (Soc. 45) not accepted in fulfillment of this requirement.

§ Credit not granted in Econ. 5 to students who have had Social Statistics (Soc. 45).

¶ Students who have had a high school course or experience in bookkeeping will be admitted to Econ. 25 by passing a placement test. For other students Econ. 24 is a prerequisite to Econ. 25.

Economics 1-2 the sequence 1f-2w-3s), or may be taken later; Economics 5, 6-7 and 24-25-26 belong in the sophomore year.

Of the courses taken to meet the requirements of (1) English, (2) social science, (3) mathematics or laboratory science, freshmen should take at least two and thus leave not more than one for the sophomore year. To meet the third of these requirements, students who intend to specialize in accounting, banking, insurance, or statistics should take mathematics instead of natural science. Indeed, mathematics is recommended for all students planning to enter the School of Business Administration, either as a subject to meet this requirement or as an elective.

Courses in English, mathematics, all the laboratory sciences, and all of the social sciences are open to freshmen.

Of other courses recommended above, Psychology 1-2 (General Psychology) belongs in the sophomore year; Economics 32-33 (Typewriting) may be taken as early as the student's first quarter in college, with the instructor's permission; foreign language, which is required in the foreign trade sequence, may be taken as early as the beginning of the freshman year.

B. Junior College Requirements for Admission to Sequences Leading to the Degree of Bachelor of Science in Economics

Economics Sequence

	Credits
English (Comp. 4-5-6 or Com. 1-2-3 or English A-B-C)	9 or 12 or 15
Mathematics	10
Elements of Money and Banking (Econ. 3)*	5
Principles of Economics (Econ. 6-7)	10
Elements of Statistics (Econ. 5)**§	5
Political Science or History	9
Philosophy (Phil. 1 or 2)	5
Additional mathematics or laboratory science	10
Electives	27 or 24 or 21
	<hr/>
	90

Statistics Sequence

English (Comp. 4-5-6 or Com. 1-2-3 or English A-B-C)	9 or 12 or 15
Trigonometry (Math. 6)	5
College Algebra (Math. 7)	5
Analytic Geometry (Math. 30)	5
Elements of Money and Banking (Econ. 3)*	5
Principles of Economics (Econ. 6-7)	10
Elements of Statistics (Econ. 5)**§	5
Political Science or History	9
Philosophy (Phil. 1 or 2)	5
Additional mathematics	5
Principles of Accounting (Econ. 24-25-26)¶	9
Electives	18 or 15 or 12
	<hr/>
	90

* Students who do not elect the above courses in money and banking and statistics during the sophomore year may substitute the following: Money and Banking (B.A. 57); and Statistics Survey (B.A. 70).

† Credit not granted in Econ. 5 to students who have had Social Statistics (Soc. 45).

‡ Students who have had a high school course or experience in bookkeeping will be admitted to Econ. 25 by passing a placement test. For other students Econ. 24 is a pre-requisite to Econ. 25.

D. SCHOOL OF DENTISTRY**

1. Two-Year Predental Course

The two-year predental course required for admission to the School of Dentistry is a part of the six-year course in dentistry leading to the degree of doctor of dental surgery. During the two years of prescribed work, students are registered in the College of Science, Literature, and the Arts and subject to its regulations. A minimum of ninety earned credits with a scholarship average of C is required for admission. Quality credits may not be applied to decrease the ninety credits. It is desirable that students should have had chemistry and higher algebra in high school. The required college courses are listed below:

Inorganic Chemistry 1-2, 11 or 4-5, 11 or equivalent (General Inorganic Chemistry and Semimicro Qualitative Analysis, 12 credits)

Organic Chemistry 61-62 (Elementary Organic Chemistry, 8 credits)

English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or Communication 1-2-3 (12 credits) or exemption from the requirement

Physics 1a-2a-3a (Introduction to Physical Science, with laboratory included, 12 credits)

Zoology 1-2-3 (General Zoology, 10 credits)

Additional training in chemistry and zoology is recommended

Psychology, speech, economics, history, political science, and sociology are recommended as electives

It is recommended that the two years' work be distributed as follows:

First year—Inorganic Chemistry 1-2, 11 or 4-5, 11 (12 credits); Composition 4-5-6 (9 credits) or English A-B-C (15 credits) or Communication 1-2-3 (12 credits); Zoology 1-2-3 (10 credits); one or more elective courses.

Second year—Organic Chemistry (8 credits); Physics 1a-2a-3a (12 credits); elective subjects to make the total of 90 credits for the two years' work.

2. Seven-Year Course in Arts and Dentistry Leading to the Degrees of Bachelor of Arts* and Doctor of Dental Surgery†§

During the first three years of this course, the student does his work in the College of Science, Literature, and the Arts, subject to the regulations of the college, and must earn at least 135 credits, with a scholarship average of C. At least 30 credits|| must be in Senior College courses. He must complete the requirements for admission to the Senior College, which are given on pages 10-13 and also the work in chemistry, physics, and zoology prescribed for admission to the School of Dentistry.

During his third year, the student elects work in this college, subject to the approval of the assistant dean for the Senior College. The work of the freshman and sophomore years in the School of Dentistry, exclusive of technical and practical work, when completed according to the standards required by that school, counts as the equivalent of the fourth year (45 credits of the Arts course).

3. Course Leading to the Degrees of Graduate Dental Hygienist and Bachelor of Arts

This program consists of two years of work in the School of Dentistry and additional work in the College of Science, Literature, and the Arts. When students have completed the work for dental hygienists, as speci-

* From the College of Science, Literature, and the Arts.

† Only students who have completed the required work in the College of Science, Literature, and the Arts before entering the professional school will be permitted to avail themselves of the privilege of securing the B.A. degree in this combined course.

§ From the School of Dentistry.

|| Thirty is the number usually required. For some students it may be reduced by special permission of the assistant dean for the Senior College.

** 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.

fied in the *Bulletin of the School of Dentistry*, with a C average, they may enter the Senior College of the College of Science, Literature, and the Arts; and they may qualify for the degree of bachelor of arts provided that they fulfill the requirements listed on page 15 of this bulletin. A portion of the work done in the School of Dentistry may be used to satisfy the Junior College group requirements and/or be used as elective credits.

E. COLLEGE OF EDUCATION

All students who desire to receive a state teacher's certificate upon graduation from the University of Minnesota must be graduates of the College of Education. In many cases students register in that college at the beginning of their junior year. In certain four-year and five-year curricula, however, they should register in the College of Education at the beginning of their freshman year or as soon thereafter as they have made their curriculum choice. All of these curricula are described in the *Bulletin of the College of Education*. Students should secure a copy of the bulletin and should have an adviser in the College of Education.

Because of increasing requirements for certification and for other types of educational work, students are urged to consider taking five years of college work.

The following statement applies primarily to students preparing to teach academic subjects in high school.^t

*General Requirements for Entering the College of Education**

The following general requirements apply to all students who regularly enter the College of Education at the beginning of the junior year:

1. A total of 90 to 96 credits carried with a scholarship average of C (1.0), and an average of C+ (1.5) in major courses. (For each five honor points in excess of the number necessary for a C average, the number of credits is diminished by one.) For men 3, and for women 5, of these credits should be in physical education.

2. The student must have completed 6 credits in General Psychology 1-2.

3. Health education—All students in the College of Education, before graduation, are required to take a sequence of courses in (a) personal health, (b) community health, and (c) school health. Students who are exempted by examination from the first of these requirements while registered in the College of Science, Literature, and the Arts will also be exempt from (a) in the College of Education. The number of credits will depend upon possible exemption and the sequence of courses chosen. A minimum of six credits covering all three fields is required unless students are exempted from (a). It is strongly urged, but not required, that requirements (a) and (b) be met before entering the College of Education.

Junior College courses which may be taken to meet the requirement in personal health are as follows: Public Health 3 (Personal Health, 2 credits) or General College 10C (Human Biology). The Junior College course to meet the requirement in (b) community health is Public Health

* For exception in special cases to the total credit requirement, group requirements, or other requirements, the student may consult the Student Personnel Office, College of Education, 206 Burton Hall.

^t Students who transfer to one of the specialized four-year or five-year curricula such as Art Education, Elementary Education, Music Education, Physical Education and others should consult the *Bulletin of the College of Education* for the requirements of the first two years.

4 (Health Problems of the Community, 2 credits). The course Public Health 50 (Personal and Community Health, 3 credits),[†] taken after entering the College of Education, will meet the requirements of (a) and (b).

4. At the time of entrance to the College of Education a student must present a certificate from the Students' Health Service indicating that he is free from physical defects that would prevent the successful pursuit of educational work, and a certificate from the Speech and Hearing Clinic that he meets the speech requirements for teaching.

5. At the time of applying for transfer to the College of Education, the student also must complete the necessary clearances on certain psychological tests in addition to the health and speech examinations.

Group Requirements for Students Entering the College of Education

Students preparing to teach academic subjects in high school take the first two years in the College of Science, Literature, and the Arts. To qualify for the state high school standard certificate they must have one major and one or more minors in subjects commonly taught in high schools. The College of Education offers majors and minors in the following fields: language arts, English, speech, journalism; core curriculum; German, Latin, French, Scandinavian, Spanish; library science; social studies, geography, history, political science, sociology; natural sciences; public health; mathematics. The specific requirements for the different majors and minors are given in Section II of this bulletin and also in the *Bulletin of the College of Education*. Special combinations of majors and minors are provided in the language arts, natural science, and social studies curricula. Five-year curricula are offered in English Education, Natural Science Education, and Social Studies Education.

The selection of suitable majors and minors and the most desirable combinations of subjects is very important in securing a high school teaching position. Counselors in the Student Personnel Office of the College of Education will help the student in making such selection and will also furnish information in regard to the current demands for teachers in the various fields and the possibility of future placement.

Before entering the College of Education the student must complete, in addition to the requirements listed above, the group requirements of the Junior College of the College of Science, Literature, and the Arts. With slight modifications the student may choose either Plan I or Plan II. (See pages 10-13.) Plan II is recommended. Courses offered in the Department of General Studies are preferred.

Modifications to meet College of Education entrance requirements are as follows:

a. In either plan 6 credits in psychology (Psy. 1-2, General Psychology) are required.

b. In either plan the student is advised to complete the (1) personal health and (2) community health information requirement. This includes in addition to P.H. 3, Personal Health (or equivalent), the course P.H. 4, Health Problems of the Community.[†]

c. In Plan I the student may not use psychology (with laboratory) to meet the natural science requirement in Group D.

d. In Plan II, Group D, the student must take a minimum of 9 credits in natural science exclusive of psychology and mathematics.

e. Within the total credits a student must meet, in fields of study which are represented in prevailing high school curricula, the following requirement in the Junior College: At least 15 credits in a major field

[†] The course P.H. 50 (Personal and Community Health, 3 credits) is a substitute for both Course 3 and Course 4. It is primarily for juniors and seniors but sophomores are sometimes allowed to take it.

with a 1.5 average and at least 10 credits in each of two minor fields. The purpose of this requirement is to prepare the student for the study of advanced courses necessary to the completion of satisfactory teaching majors and minors.

Specialized Curricula. The specialized curricula offered by the College of Education based upon two years' work in the College of Science, Literature, and the Arts are Business and Distributive Education and Speech Pathology. Students in these curricula are not held for the Group Requirements. The Junior College work, however, is selected to meet the professional needs and specific courses are required. The student should consult the *Bulletin of the College of Education* for requirements of his curriculum and should confer with the adviser of that curriculum early in his course.

F. LAW SCHOOL*

Ninety credits of academic work are required for admission to the Law School. Students entering the University intending to study law register for this academic work in the College of Science, Literature, and the Arts. A scholarship average of C for all courses taken up to the time of admission to the Law School is also required. Excess honor points do not reduce the number of credits required.

Before trying to plan their college course preliminary to the Law School, students should read carefully the statements about the Law courses and the combined courses in Arts and Law and in Business Administration and Law described below.

The following course has been outlined by the faculty of the Law School for the two years of college study required. The Humanities courses may be taken in place of, or in addition to, the courses in Political Science.

Accounting: Economics 27 (Survey, 5 credits)† or 24-25-26 (Principles, 9 credits)

Economics: 6-7 (Principles of Economics, 10 credits)

English: A-B-C (Freshman English, 15 credits) or Composition 4-5-6 (Freshman Composition, 9 credits) or Communication 1-2-3 (12 credits) and Composition 27 (Advanced Writing, prelegal section, 3 credits)

History: 70-71-72 (English Constitutional History, 9 credits)

Humanities: 1-2-3 (Humanities in the Modern World, 15 credits)

Philosophy: 1A-2A-3A (Selected Problems of Philosophy, Selected Problems of Logic, Selected Problems of Ethics, 9 credits) or 1, 2, 3 (Problems of Philosophy, Logic, Ethics, 15 credits)

Political Science: A-B (First two quarters of A-B-C) (The State in the Modern World, 6 credits); and either C (3 credits) or 25 (World Politics, 3 credits)

Psychology: 1-2 (General, 6 credits)

Electives to make the total at least 90 credits. Foreign language (0 to 20 credits, according to the schedule given on page 11), natural science (10 or 15 credits as indicated on page 11), and Public Health 3 (Personal Health, 2 credits) should be included in these electives by students taking the combined course leading to the degrees of bachelor of arts and bachelor of laws which is outlined below. Such students may take Philosophy 50 and 52 (courses in the general history of philosophy) instead of Philosophy 1 and 3. Suggested electives for other students are: English History or Civilization of the Modern World, Modern Philosophies of Social Reform (Philosophy 70), and other courses in Anthropology, Economics, Political Science, Sociology, and Speech

* 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.

† This course in accounting is a special course for prelaw students. It is not open to students who have had all or part of Econ. 24-25-26 (Principles of Accounting, 3 credits per quarter) or the old Course 22-23 (Principles of Accounting, 4 credits per quarter).

It is recommended that the two years' work be distributed as follows:

First year—Composition 4f-5w-6s (9 credits), or English Af-Bw-Cs (15 credits) or Communication 1f-2w-3s (12 credits); Philosophy 1Af-2Aw-3As (9 credits); Humanities 1f-2w-3s (15 credits) or Political Science Af-Bw, and either Cs or 25s (9 credits); History 4f-5w-6s (English History, 9 credits) which is not required but is recommended as an elective course in preparation for English Constitutional History.

Second year—Composition 27 (3 credits); Economics 6f-7w (10 credits), 27s (5 credits)[†] or 24f-25w-26s (9 credits); History 70f-71w-72s (9 credits); Psychology 1f-2w (6 credits); Humanities or Political Science not taken in the first year; elective courses to make a total of 90 credits for the two years' work.

Military and G.E.D. credits—The Law School, in accordance with a ruling of the Association of American Law Schools, will not accept for admission more than 12 quarter credits for military training *as such*.[§] Veteran students are encouraged not to make use of G.E.D. credits at all, and, in any event, the Law School will normally not recognize more than 18 G.E.D. credits. Up to 6 credits of basic R.O.T.C. training will be accepted for admission.

Courses Leading to the Degrees of Bachelor of Science in Law[¶] and Bachelor of Laws[¶]

The Law School offers two undergraduate degrees: bachelor of science in law (B.S.L.) and bachelor of laws (LL.B.). The B.S.L. requires two years (90 quarter credits) of prelaw college work and two years of law study. The LL.B. requires either: (1) two years of college and four years of law, or (2) a B.A. or equivalent academic degree before entering law school plus three years of law. To qualify for bar examinations and admission to practice one must obtain the LL.B. The B.S.L., evidencing four years of substantial academic and law study, is available for those who do not wish to practice law but desire a fairly extensive knowledge of it for use in other fields.

The "Two-Four" course leading to the LL.B. is the modern Minnesota Plan for legal education, designed to give the student a broad professional training in addition to the standard "bread and butter" law work. It seeks to equip him not only for general law practice, but also for the numerous governmental and civic positions held by lawyers, and for the leadership traditionally assumed by the legal profession.

Until fall quarter, 1953, students who have a B.A. or equivalent degree before entering the Law School can obtain an LL.B. degree with three years (144 quarter credits) of law study. Thereafter they must complete three and one-half years (160 quarter credits) of law work. This alternative program is mainly for students who have obtained a college degree before deciding to study law. For those who intend to study law when they enter college, the law faculty believes that the Minnesota "Two-Four" Plan offers a better balanced and more flexible program.

Students who desire only the B.S.L. degree may take either the specified prelaw subjects (see above) or 90 credits of such other prelaw work as they desire. The prebusiness course in the College of Science, Literature, and the Arts is acceptable. An average of "C" in the prelaw work is necessary. The two years of law work may be either the regular first- and second-year law subjects or selected law courses to meet individual needs.

[†] This course in accounting is a special course for prelaw students. It is not open to students who have had all or part of Econ. 24-25-26 (Principles of Accounting, 3 credits per quarter) or the old Course 22-23 (Principles of Accounting, 4 credits per quarter).

[§] Military credits as such are credits earned in service schools or in schools under service contract for which there are no comparable courses in the College of Science, Literature, and the Arts except ROTC or NROTC courses.

[¶] From the Law School.

Seven-Year Combined Course in Arts and Law Leading to the Degrees of Bachelor of Arts* and Bachelor of Laws†

This course requires three years of college work and four years in the Law School. The first two years of college work may be taken in any accredited college, but the third year must be taken in the College of Science, Literature, and the Arts of this University. All three years of college work may be taken before entering the Law School, or two years before entering the Law School, and the third year after the completion of one year or more of law work. The latter plan enables the student to select college work in which he may have become interested during his law course.

Students in this combined course must, before transferring to the Law School, complete the requirements for admission to the Senior College of the College of Science, Literature, and the Arts, stated on pages 10-12. The student must earn at least 90 credits with a scholarship average of C. Except for admission to the Law School this number of credits required may be reduced by application of the "quality credit" rules given on page 20. He must also earn, either before entering the Law School or after completing one year or more of the law course, 45 additional college credits, of which at least 30§ must be in Senior College courses with a C average. This third year of work must be approved by the assistant dean for the Senior College of the College of Science, Literature, and the Arts. In order to satisfy the requirements for the degree of bachelor of laws, the three years of college work should include the subjects specified above for the prelaw course.

The degree of bachelor of arts is conferred when the 135 credits of college work specified above and at least the first year of the course in the Law School, with the standing required by that school for graduation, are completed. The degree of bachelor of laws is conferred when the work of all seven years is completed.

Seven-Year Combined Course in Business Administration and Law Leading to the Degrees of Bachelor of Business Administration‡ and Bachelor of Laws†

This program consists of two years of prelaw and prebusiness work as specified below, approximately one and one-half years in the School of Business Administration instead of the full two-year program, and three and one-half years in the Law School instead of the full four-year program, thus allowing the student to qualify for both the bachelor of business administration and the bachelor of laws degree in seven years.

The prelaw and prebusiness work must amount to 90 credits, exclusive of quality credits, and shall include the regular prelaw course** except Economics 27 and in addition Economics 5 (Elements of Statistics) and Economics 24-25-26 (Principles of Accounting).

There are two options for the remaining five years:

- A. The first year exclusively in the Law School and the second year exclusively in the School of Business Administration, or vice versa. The third and fourth years exclusively in the Law School and the fifth year to be divided between the two schools, approximately half of the program being in each school.
- B. The distribution of both the business administration and the law course throughout the five-year program.

* From the College of Science, Literature, and the Arts.

† From the Law School.

‡ Thirty is the number usually required. For some students it may be reduced by special permission of the assistant dean for the Senior College.

** From the School of Business Administration.

See page 165 of this bulletin.

The course requirements in Business Administration include the general core group courses exclusive of Business Law (B.A. 51-52-53). This amounts to a total of 36 credits. Substitutes, such as Economics 185 for B.A. 77, B.A. 184 for B.A. 89, may be made with the approval of an adviser. The remaining courses—approximately 32 credits—may be elected from the Senior College courses in economics and business administration with the approval of an adviser.

The course requirements in the Law School include all the courses of the first and second years, the required courses of the third and fourth years, and electives sufficient with the required courses to make a total of approximately 72 credits in the third and fourth years.

Students will be registered for the joint program in the Law School and the School of Business Administration throughout the five-year period. Their programs will be subject to approval of an adviser from the Law School and an adviser from the School of Business Administration.

G. COLLEGE OF MEDICAL SCIENCES*

The principal curricula offered in the College of Medical Sciences are the following: Medicine, nursing, medical technology, physical therapy, and occupational therapy. Each affords training for a different profession and the requirements of each course should be read carefully.

I. COURSES LEADING TO THE DEGREE OF DOCTOR OF MEDICINE†

There are two eight-year courses of study which lead to the degree of doctor of medicine. Both require three full years of college work (135 credits exclusive of quality credits) which must include the courses prescribed for admission to the Medical School. In the first course the student may freely choose elective subjects to make up the total of 135 credits. He will receive the degree of bachelor of science after he completes two years of work in the Medical School. In the second of the two courses, the student must meet the requirements for admission to the Senior College of the College of Science, Literature, and the Arts which he should enter, normally, after two years of residence in the Junior College. His program for the third year must be submitted for approval to the assistant dean for the Senior College. He will receive the degree of bachelor of arts after he completes satisfactorily one year of work in the Medical School.

Residence—First choice is given to residents of Minnesota, second choice to residents of neighboring states that do not have medical schools, third choice to other nonresidents who have acceptable reasons for attending here. Nonresidents are accepted only if their scholarship has been outstanding and other qualifications indicate that they have unusual promise for the study of medicine or a career in science. Applicants who make their homes in Minnesota only subsequent to graduation from high school are considered by the Admissions Committee of the Medical School as though nonresidents.

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 require-

* For detailed information about the individual subjects of study in these curricula (course numbers and titles, credits, prerequisites, etc.), see Section II of this bulletin.

† Students who desire to receive a college degree before entering the Medical School must include all of the required premedical subjects in the "Course Leading to the Degree of Bachelor of Arts" for which the requirements are stated on pages 10-15. They may find it to their advantage to take the course with an interdepartmental major rather than a major in one department. (See page 14.)

ments, all premedical students are urgently advised to plan their three years of premedical work in such 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.

Eight-Year Course in Science and Medicine Leading to the Degrees of Bachelor of Science,§ Bachelor of Medicine,§ and Doctor of Medicine\$

The minimum requirements in order to be considered for admission to the Medical School are three 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 applicants, few are accepted whose average is less than a very high C or B.

The premedical work, for which the student is registered in the College of Science, Literature, and the Arts, must include the required courses listed below or their equivalent as approved by the Admissions Committee of the Medical School.

Required Courses

English A-B-C (Freshman English, 15 credits) or **Communication 1-2-3** (12 credits) or exemption from the requirement. **Composition 4-5-6** (9 credits) will be accepted as meeting part of this requirement when supplemented by additional credits in English composition or speech to make the total of at least 12 quarter credit hours. **Composition 27** (Advanced Writing for premedical students) may be used in partial fulfillment of the English requirement.

Zoology 1-2-3 (General Zoology, 10 credits) and **Zoology 83** (Introduction to Genetics and Eugenics, 3 credits)

Chemistry—**Inorganic Chemistry 1-2, 11 or 4-5, 11** or equivalent (**Inorganic Chemistry, 12 credits**); **Analytical Chemistry 7** (**Quantitative Analysis, 4 credits**); **Organic Chemistry 61-62** (**Elementary Organic Chemistry, 8 credits**); and **Physical Chemistry 107-108** (**Elementary Physical Chemistry, 6 credits**)

Mathematics—as a prerequisite for physics: **Course 1** (**Higher Algebra, 5 credits**) unless the student has had high school higher algebra; **Course 15-16** (**Elementary Mathematical Analysis, 10 credits**) or equivalent

Physics 4-5-6 (**General Physics, 15 credits**)

Psychology 1-2 (**General Psychology, 6 credits**)

Social Science, 12 credits. This is a requirement which may be met in a variety of ways, including course work in anthropology, economics, geography, history,* political science, social science, and sociology

Humanities, 9 credits. This is a requirement which may be fulfilled with credits earned at the Junior or Senior College level. Course sequences in classics (including languages), comparative philology and linguistics, history,* humanities, and philosophy are accepted

It is suggested that the three years' work be distributed as follows:

First year—**Inorganic Chemistry 1f-2w, 11s or 4f-5w, 11s (12 credits)**; **Mathematics 1, 15-16 (15 credits)**; **Zoology 1f-2w-3s (10 credits)**; **Composition 4f-5w-6s (9 credits)** or **Communication 1f-2w-3s (12 credits)** or **English Af-Bw-Cs (15 credits)**.

Second year—**Organic Chemistry 61f-62w** and **Quantitative Chemistry 7s (12 credits)**; **Physics 4f-5w-6s (15 credits)**; **Composition 27f**, if the student elected **Composition 4-5-6** during the freshman year (3 credits); **Psychology 1f-2w** or **Psychology 1w-2s (6 credits)**; **Social Science (12 credits)**.

Third year—**Physical Chemistry 107f-108w (6 credits)**; **Humanities (9 credits)**, **Zoology 83f or 83s (3 credits)** and electives chosen in conference with an adviser.

* History may be counted for credit in Social Science, or for credit in the Humanities area but not toward fulfillment of both requirements.

§ From the Medical School.

|| The following quotation from the *Bulletin of the Medical School* applies to students who do their premedical work here. "The total number of credits for admission to the Medical School required of students who do their premedical work at Minnesota may, at the discretion of the Admissions Committee, be diminished in the case of superior students, under the quality credit rule of the College of Science, Literature, and the Arts. Required courses may not be omitted without the approval of the Admissions Committee of the Medical School."

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 normally are encouraged to concentrate their electives in the subjects listed below and they should devote at least 18 quarter credits to a sequence in one of the following. This represents work beyond required premedical courses. Normally the department chosen for elective emphasis should be different from that chosen to fulfill the required courses above.

Anthropology	English	Humanities	Romance Languages
Biostatistics	Fine Arts	Philosophy	Social Science
Child Welfare	German	Political Science	Sociology
Classics	History	Psychology	Speech
Economics			

Since the courses required for admission provide a concentration in physical and biological sciences, it is usually undesirable for the student who takes only three years of premedical work to devote many elective credits to botany, chemistry, geology, mathematics, physics, or zoology. However, an applicant who has a special interest in one of these particular sciences may be an exception to this general rule.

Although a reading knowledge of a modern foreign language is not a requirement for admission, competence in at least one foreign language is exceedingly important for those individuals who may become interested in *medical research* or in *graduate training in medicine*. It is recommended that such students devote at least 20 of their elective credits to German, French, or another appropriate modern foreign language.

Most students benefit from a fourth year of general or specialized education before they enter upon the medical course. This longer period of preparation is encouraged by the Admissions Committee of the Medical School.

For admission to the Medical School, a candidate's record must show a number of honor points at least equal to the total number of credits in the group of required subjects; also a number of honor points at least equal to the total number of credits in all subjects. A higher average is exacted of nonresident applicants. Applicants are required to take a battery of tests for premedical students given by the Student Counseling Bureau. The scores on these tests are considered by the Admissions Committee in advising students and determining admission. A student applying for admission should file credentials at least nine months before the admission date of the class for which he applies. An application blank may be obtained by addressing the assistant dean of the Medical School and *at the time of filing this should be accompanied by two transcripts of the applicant's college credits up to the date of application*. All admissions are subject to the limited registration regulations of the Medical School.

The work which is credited as the fourth year in candidacy for the degree of bachelor of science is taken in the Medical School. To earn this degree, a student must have completed the first two years of the medical course with a C average.

Students who have completed elsewhere three or more years of collegiate or university work which includes the required subjects specified above and which is in other respects the full equivalent of the three years of academic work required in this eight-year course will be awarded the degree of bachelor of science on recommendation of the faculty of the

Medical School, provided they meet the scholarship requirements stated above.

The foregoing regulations governing the quality and amount of pre-medical 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 area of education (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 Medical School.

A broad, general education is considered fundamental to medical study, but no student can pursue the medical course to advantage without adequate knowledge of biology, chemistry, and physics. Therefore, no substantial amount of the credits required in these premedical subjects is likely to be waived by the Admissions Committee.

**Eight-Year Course in Arts and Medicine, Leading to the Degrees of
Bachelor of Arts,* Bachelor of Medicine,† and Doctor of Medicine†**

During the first three years of this course, the student is registered in the College of Science, Literature, and the Arts, subject to the regulations of the college, and must earn at least 135 credits, with a scholarship average of C. (This number of credits may be reduced§ by application of the "quality credit" rules given on page 20.) At least 30 credits|| must be in Senior College courses. He must complete the requirements for admission to the Senior College, given on pages 10-12 and also the work in chemistry, mathematics, physics, psychology, zoology, and foreign language prescribed for the eight-year course in Science and Medicine (page 169).**

During his third year, the student elects work in this college, subject to the approval of the assistant dean for the Senior College. The first year of the course in the Medical School, when completed with the standards required by that school, counts as the equivalent of the fourth year (45 credits) of the Arts course.

For admission to the Medical School, a student's record must show a number of honor points at least equal to the number of credits in the group of required subjects; and also a number of honor points at least equal to the total number of credits. A higher standard is exacted of nonresident applicants. All admissions are subject to the limited registration regulations of the Medical School.

2. CURRICULUM IN NURSING\$§

The basic professional curriculum in nursing leading to the degree of bachelor of science in professional nursing is a sixteen-quarter program—six quarters in the College of Science, Literature, and the Arts or any other accredited university, college or junior college, and ten quarters in the School of Nursing. This program, open to both men and women, is planned to prepare students for staff level positions in all fields of nursing. The professional portion of the program is open to (a) students who have completed 95 quarter credits||| of college work in-

* From the College of Science, Literature, and the Arts.

† From the Medical School.

§ For a statement about "quality credits" and admission to the Medical School, see the § footnote on page 168.

|| Thirty is the number usually required. For some students it may be reduced by special permission of the assistant dean for the Senior College.

** For recommended electives and the restrictions governing them, see page 170.

\$§ For advanced professional and practical nursing curricula see the *Bulletin of the School of Nursing*.

||| The number of credits may be diminished, in the case of superior students, under the quality credit rule of the College of Science, Literature, and the Arts.

cluding required courses as listed below (with a C average), and (b) graduates of a Bachelor's degree program from an accredited college or university; candidates in this group who do not meet the requirements listed below are considered for admission on an individual basis. The following courses, or their equivalent, are required for admission to the School of Nursing:

- Composition 4-5-6 (Freshman Composition, 9 credits) or Communication 1-2-3 (12 credits) or English A-B-C (Freshman English, 15 credits) or exemption from the requirement
Inorganic Chemistry 1-2, 4-5, or 6-7 (Inorganic Chemistry, 8 or 10 credits)
Zoology 14-15[§] or 1-2-3 (General Zoology, 6 credits or 10 credits)
Psychology 1-2 (General Psychology, 6 credits)
Public Health 3 (Personal Health, 2 credits)
Social Science (15 credits to 17 credits—of these, 5 credits should be in history, political science or economics)
Physical Education (5 credits)

Elective Courses

Choice of electives to make up the required total should be made on the basis of the individual's special interests. Recommended electives are courses in anthropology, child welfare, general studies, philosophy, physics, sociology, speech, and zoology.

Advisers from the School of Nursing faculty are assigned to pre-nursing students in the College of Science, Literature, and the Arts. Before registering each quarter, students should have their programs reviewed by their adviser in the School of Nursing, Room 116, Millard Hall.

Students from other universities or colleges may transfer to the University of Minnesota at any point in the prenursing program. Those who wish to complete all prenursing requirements before transferring to the University of Minnesota may do so provided they complete required courses as listed above. These students should confer with the Office of Admissions and Records early to ascertain their exact standing. They are urged to consult with the School of Nursing at the end of their freshman year.*

Information Concerning the Professional Program in the School of Nursing (Ten Quarters)

After transferring to the School of Nursing the student devotes ten quarters to professional study. During the first two quarters the student completes courses in anatomy, physiological chemistry, bacteriology, physiology, and pharmacology and starts courses in clinical nursing. During the next eight quarters emphasis is placed on clinical instruction and practice in medical, surgical, operating room, maternal, child, pediatric, psychiatric, communicable disease, and public health nursing. For further information regarding the program leading to the degree of bachelor of science in professional nursing see the *Bulletin of the School of Nursing*.

3. COURSE IN MEDICAL TECHNOLOGY

The Course in Medical Technology is a four-year course given in the College of Science, Literature, and the Arts and in the College of Medical Sciences. The degree of bachelor of science is awarded upon completion of the prescribed curriculum.

The first two years are spent in the College of Science, Literature, and the Arts. After completing 90 credits, including the required courses, with a C average, the student is eligible for admission to Medical Tech-

* By action of the State Legislature, substantial scholarships have been established for nursing students and anyone interested should inquire at the Office of the School of Nursing.

§ Preferred courses.

nology (that is, for registration in the College of Medical Sciences). The total number of required credits may be reduced in accordance with the quality credit rule of the College of Science, Literature, and the Arts. The entire fourth year (twelve months) is spent in a rotating practical service in the laboratories of the University Hospitals.

The following courses or their equivalents are prerequisites for admission to the junior year:

English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or Communication 1-2-3 (12 credits) or exemption from the requirement

Chemistry 1-2, 11 or 4-5, 11 (General Inorganic Chemistry and Semimicro Qualitative Analysis, 12 credits); Analytical Chemistry 7 (Quantitative Analysis, 4 credits); Organic Chemistry 61-62 (Elementary Organic Chemistry, 8 credits)

Zoology 1-2-3 (General Zoology, 10 credits) and Zoology 21 (Histology, 5 credits)

Anatomy 4 (Elementary Human Anatomy, 5 credits)

Physics 1-2-3 (Introduction to Physical Science, 9 credits)

Bacteriology 53 (General Bacteriology, 5 credits)

Electives. There is no essential limitation to the subjects which may be chosen as electives.

The *Bulletin of the Course in Medical Technology*, which may be obtained at the Office of Admissions and Records, contains a suggested program for the first two years. For further information the student should consult special advisers in the Medical Technology office, N-202 University Hospitals, telephone: Main 8551, extension 292.

Advisers—All students in this course should consult advisers in the Medical Technology office, N-202 University Hospitals. Registration each quarter must be reviewed by one of these advisers.

X-Ray Training

Students completing the requirements of the Course in Medical Technology have the opportunity without further payment of fees to spend an additional six months of practical training in the X-ray laboratory of the University Hospitals.

4. COURSE IN PHYSICAL THERAPY

The Physical Therapy Course is a four-year course leading to a bachelor of science degree in physical therapy. The first two years are spent in the College of Science, Literature, and the Arts during which time the studies are mainly in the basic sciences. The last two years are spent in the College of Medical Sciences, Division of Physical Medicine. For more detailed information see the *Bulletin of Physical Medicine* or write to Physical Medicine Division, 204 Temporary Building West of Hospitals, University of Minnesota, Minneapolis 14, Minnesota. All students who are pursuing this course at the University of Minnesota should consult with the Physical Therapy adviser in Room 204 Temporary Building West of Hospitals. Registration each quarter must be reviewed by this adviser.

Physical Medicine is that part of medical science concerned with the diagnosis and treatment of disease or injury by physical means. It includes the use of heat, cold, light, water, electricity, massage, exercise, rest, and climate. Many of the treatment techniques are carried out by trained personnel called physical therapists who work under the direction of physicians.

Recognition of such training is afforded by registration with the American Registry of Physical Therapists which is administered jointly with the American Congress of Physical Medicine.

Starred (*) courses are required for entrance into the Course in Physical Therapy. The other suggested courses are desirable electives.

Junior College Courses**Freshman year**

- *English A-B-C (Freshman English, 15 credits) or Composition 4-5-6 (Freshman Composition, 9 credits) or Communication 1-2-3 (12 credits) or exemption from the requirement
- *Zoology 1-2-3 (General Zoology, 10 credits)
- *Physics 1-2-3 (Introduction to Physical Science, 9 credits) or Physics 1a-2a-3a (Introduction to Physical Science, with laboratory included, 12 credits) or Physics 4-5-6 (General Physics, 15 credits)
- Public Health 3 (Personal Health, 2 credits); Public Health 4 (Health Problems of the Community, 2 credits)
- Humanities 1-2-3 (Humanities in the Modern World, 15 credits) or History 1-2-3 (Civilization of the Modern World, 9 credits) or Sociology 1, 2 (Introduction to Sociology and Intermediate Sociology, 10 credits) or Political Science 1-2-3 (American Government and Politics, 9 credits) or G.E.D. Social Science test

Sophomore year

- *Chemistry 1-2 (General Inorganic Chemistry, 8 credits) or Chemistry 4-5 (General Inorganic Chemistry, 8 credits) or Chemistry 6-7 (General Inorganic Chemistry, 10 credits) or Chemistry 9-10 (General Inorganic Chemistry, 10 credits)
- *Psychology 1-2 (General Psychology, 6 credits)
- *Psychology 3 (Psychology Applied to Daily Life, 3 credits) or three other credits in psychology (Child Welfare 80, 3 credits, is acceptable)
- *Bacteriology 53 (General Bacteriology, 5 credits) or Physiology 4 (Human Physiology, 4 credits)
- Child Welfare 40 (Child Training, 3 credits) or Child Welfare 80 (Child Psychology, 3 credits)
- Physical Medicine 2 (Orientation to Physical Therapy, 1 credit)

5. COURSE IN OCCUPATIONAL THERAPY

The Course in Occupational Therapy is a program of four academic years plus one quarter which is given in the College of Science, Literature, and the Arts and in the Medical School. The degree of bachelor of science in occupational therapy is awarded upon completion of the prescribed curriculum.

The first two years are spent in the College of Science, Literature, and the Arts. After completing 90 credits and the required courses of the first two years with a high C average, the student is eligible for admission to the Course in Occupational Therapy in the Medical School, Division of Physical Medicine. Ten months are spent in clinical training in various types of hospitals and institutions for the sick and the handicapped during the last year.

The following courses or their equivalents are prerequisites for admission to the junior year:

- English A-B-C (Freshman English, 15 credits) or Composition 4-5-6 (Freshman Composition, 9 credits) or Communication 1-2-3 (12 credits) or exemption from the requirement
- Zoology 1-2-3 (General Zoology, 10 credits)
- Public Health 3 (Personal Health, 2 credits)
- Psychology 1-2 (General Psychology, 6 credits)
- Sociology 1 (Introduction to Sociology, 5 credits)
- Humanities 1, 2 (Humanities in the Modern World, 10 credits)
- Anatomy 4 (Elementary Anatomy, 5 credits)
- Physiology 4 (Human Physiology, 4 credits)
- Art 1 (Introduction to Art, 4 credits)
- Art 23-24 (Drawing and Design I, 10 credits)
- Art 33, 34, 89 (Textile Design: Weaving, 9 credits)
- Art 43 (Textile Design, 3 credits)
- Art 93, 94 (Ceramics, 6 credits)
- Art 97 (Textile Design: Printing Processes, 3 credits)
- Child Welfare 40 (Child Training, 3 credits)
- Physical Education 51 (Mechanics of Movement, 3 credits)

Occupational Therapy 1 (Orientation, 1 credit)
Physical Education, 1½ credits
Electives to make a total of at least 90 credits

For more detailed information the student should consult a special adviser in the Occupational Therapy office, 209 Temporary Building West of Hospitals, telephone: Main 8158, extension 6610. See *Bulletin of Physical Medicine*.

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 College of Science, Literature, and the Arts.

H. SOCIAL WORK

Professional study in the School of Social Work, which is a part of the College of Science, Literature, and the Arts is at the graduate level. The recommended preprofessional program is *Sequence D* of the Department of Sociology which is described on page 144 of this bulletin.

INDEX

Page	Page		
Abbreviations and symbols, explanation of	24	Combined arts and professional courses	14
Addition of courses	16	Committee on Students' Work	9
Administrative officers	3	Communication	70
Admission		Comparative Philology and Linguistics	100
High school graduates	6	Composition	67
Non-high school graduates	7	Counselors for students	8
Transfer students	7, 13	Courses	
Veterans	7	Canceling of	16
Adult special students	8	In other colleges	17
Advanced standing	7, 8, 13	Junior College	17, 24
Advertising specialization in journalism	94	Repetition of	18
Adviser for foreign students	10	Senior College	17, 24
Advisers for students	8	Without credit	17
Agronomy	44	Credit load	
Air Science and Tactics	25	Maximum	16
American Studies	26	Minimum	16
Amount of work	16	Credits	
Anatomy	27	Explanation of	19
Anthropology	27	Number to be earned in residence	13
Approval of program	13	Quality	20
Architecture		Required	12
Courses in	29	Debate	149, 150
Arts and	158	Degree	
Area Studies	90	Requirements, B.A.	13
Art	30	Requirements, A.L.A.	13
Arts and professional courses, combined	14	Dental hygienist and bachelor of arts	162
Associate in liberal arts degree	13	Dentistry	
Astronomy	38	Arts and	162
Attendance, class	22	Predental course	162
Audited courses	17	Department chairmen, heads, and directors	3
Awards and scholarships	23	Departmental major and minor	14
Bachelor of arts, courses leading to	13	Design	36
Bacteriology	39	Discontinuance from college	21
Biochemistry	50	Drawing and Descriptive Geometry	54
Biology	73	Dropped from college	20, 21
Biophysics	157	Economics	55
Biostatistics	135	Education, College of	163
Board of Regents	3	Educational Psychology, courses open	
Botany	40	to SLA students	61
Bureau of Student Loans and Scholarships	10	Educational Skills Clinic	10
Bureau of Veterans' Affairs	10	Efficient Reading	136
Business Administration	159	Election of subjects in other colleges	17
Business Administration and Law	167	English	
Canceling of courses	16	Classification cards	67
Celtic	101	Courses in	62
Ceramics	36	Exemption from requirement	67
Changes in registration	16	Entomology and Economic Zoology	157
Chemistry	44	Examinations	
Child Welfare	50	Final	22
Chinese	52	For advanced standing	8
Classics	52	For credit	22
Classification of students	19	For entrance	7
College offices	2	General Educational Development Tests	22
		To demonstrate proficiency	22

INDEX

177

	Page		Page
Exclusion from college	21	Law	
Extension courses	17, 23	Course in Arts and	167
Faculty counselors for students	8	Course in Business Administration	
Failures, rules governing	19	and	167
Family Life	70	Prelegal Course	165
Fees		Science in Law	166
Late registration fees (or privilege fees)	16	Liberal Arts major	14
Tuition	23	Library Instruction	99
Final examination schedule	22	Linguistics and Comparative Philology	100
French	136		
Freshman English, regulation applying to	67	Major, prerequisites for	12
Freshmen	19	Major sequence	14
General Education, purpose of	4	Marriage, Preparation for	70
General Educational Development		Mathematics	102
Tests	22	Maximum credit load	16
General Extension, courses in	17, 23	Medical Sciences, College of	168
General information	4	Medical Technology	172
General Studies	69	Arts and	171
Geography	74	Premedical course	169
Geology and Mineralogy	77	Science and	169
Geophysics	124	Military Science and Tactics	107
German	80	Minimum credit load	16
Grades	19	Minor sequence	14
Graduate School, credit in	17	Music	108
Graduation, requirements for	10, 15	Music Education, courses open to SLA students	112
Graduation honors	15		
Greek	52	Natural Science	72
Group requirements	10	Naval Science	112
History	83	Norwegian	141
History of Art	33	Nursing	171
Home Economics, courses open to SLA students	88		
Honor point ratio	20	Occupational Therapy	174
Honor points	19	Organization of college	5
Honors, graduation	15		
How to Study	73	Painting	35
Humanities		Personal Orientation	73
Courses in	70	Personnel services	8, 10
Majors in	89	Personnel staff offices	
Incompletes	19	Junior College	10
Interdepartmental major	14	Senior College	10
Intermediary Board	5	Petitions	19
International Relations and Area Studies	90	Philosophy	114
Italian	137	Physical Education	
Japanese	92	For men	118
Journalism	92	For women	119
Junior College	10	Physical Therapy, course in	173
Junior College Counseling Office	8	Physics	121
Junior College courses	17	Physiological Hygiene	136
Juniors	19	Physiology	124
Latin	52	Placement services	10
Latin-American Studies, course in	137	Plant Pathology	44
		Political Science	125
		Portuguese	139
		Prebusiness course	159
		Predental course	162
		Prelaw course	165
		Premedical course	168
		Prerequisites for courses accredited	18
		Prints	35
		Privilege fees	16
		Probation	20

Page	Page		
Professional training	5	Programs in	13
Programs		Requirements for admission to	10
Junior College	10	Senior College courses	17
Senior College	13	Election by Junior College stu-	
Psychology	130	dents	24
Public Health	134	Seniors	19
Public Health Nursing	172	SLA Intermediary Board	5
Purpose of college	4	Slavic	102
Quality credits	20	Social Science	73
Radio	136	Social Work	143, 175
Radio-Journalism specialization	94	Sociology	144
Radio Speech, major in	149	Sophomore culture tests	12
Reading	136	Sophomores	19
Readmission	21	Spanish	139
Registration		Special fees	16
Changes in	16	Special interests	5
Dates	16	Special students	8
Late fee for	16	Speech and Theater Arts	149
Procedures	16	Speech and Hearing Clinic	10, 149
Regulations	19	Student Activities Bureau	10
Regulations, petitions for exemption from	19	Student Counseling Bureau	10
Repetition of courses	18	Student Employment Office	10
Repetition of high school courses	18	Student Housing Bureau	10
Residence requirement	13	Student personnel services	8
Rhetoric	136	Student Scholastic Conduct Commit-	
Romance Languages	136	tee	9
Russian	141	Students' Health Service	10
Sanskrit	101	Students' Work Committee	9
Satisfactory progress	20	Subjects in other colleges, election of	17
Scandinavian	141	Swedish	141
Scholarship average	19	Theater, major in	149
Scholarships and awards	23	Theological Training, preparation for	153
Sculpture	35	Transfer to another college	21
Secretarial training	57, 160	Tuition	23
Semitic	102	University College	158
Senior College		Veterans	
Application for entrance to	12	Admission of	7
Credits required	12, 13	Special tests for	22
Major advisers	9, 10	Vocational exploration	5
		X-Ray Technology	173
		Zoology	154



EDUCATION FOR JOURNALISM AND MASS COMMUNICATION

The *Bulletin* of the
UNIVERSITY OF MINNESOTA

Calendar For a Journalism Student

FALL QUARTER

Sigma Delta Chi and Theta Sigma Phi coffee hour
Homecoming: reunion of Journalism alumni
Minnesota High School Press Association meeting
Sigma Delta Chi initiation
Dog Watch: skits and snacks

WINTER QUARTER

Radio News Editors Conference
Daily News Executives Conference
Media Mixer

SPRING QUARTER

Kappa Tau Alpha initiation and breakfast
Theta Sigma Phi Matrix banquet
Sigma Delta Chi initiation and dinner
J-Day: picnic and student-faculty ball game
Twin Cities Newspaper Guild Memorial lecture
Weekly Editors Short Course
Industrial Editors Short Course

Sigma Delta Chi and Advertising Club meetings with guest speakers throughout the school year.

Vol. LIII

No. 37

August 15, 1950

Entered at the post office in Minneapolis as semi-monthly second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918

Education for Journalism at University of Minnesota

THE UNIVERSITY OF MINNESOTA prepares young men and women for careers in journalism by offering a program of study that emphasizes:

- A sound liberal education;
- A thorough understanding of the professional responsibilities of a free press in a democratic society;
- A fundamental knowledge of journalistic techniques and procedures.

The School believes that if you propose to follow a career in journalism, you will need to understand the world in which you will live and work. You will need to recognize that no profession today (journalism perhaps least of all) operates in a vacuum, but rather that it affects, and is affected by, all the social and cultural forces whose currents it cuts across. You will need to be intelligently and informedly critical.

This means that upon graduation, you should be educated in the best sense of the word—that you should have a background in the social sciences, in literature, and in natural science, as the framework into which to fit your life and work.

Second, the School believes that if you undertake a journalistic career, you must be able to see the precise relationship between community life and the field of journalism itself. The responsibilities inherent in the public-interest nature of journalism are great. You need to think of your profession, therefore, as an instrument of society.

Further, you should realize that journalism is *communication* and that it involves the administration of news and opinion over several channels and through more than one agency. It is more than reporting and editing for the daily and weekly press. It in-

Reporting of public affairs students attend a press conference with Governor Youngdahl.





News-editing students edit copy from press association teletype machines in Murphy Hall.

cludes magazine and book work, the radio, advertising, and other instrumentalities of public information and enlightenment. The University of Minnesota School of Journalism is, in effect, a communications center whose staff, curricula, and facilities are available for training in the communications field.

Finally, as a prospective journalist, you will need basic training in the tools and techniques you will be called upon to use vocationally. Journalism requires special competence, acquired both through intellectual training and through familiarity with certain fundamental skills and practices. The School of Journalism seeks to provide an introduction to the basic tools and to show the relationship of skill-training to the first and second principles of sound journalistic education described above.

To help you achieve these purposes, the School of Journalism offers a four-year course leading to the bachelor of arts degree, with wide flexibility for the development of your individual aptitudes.

The School also offers a graduate year terminating in the master of arts degree to those qualified to enter the Graduate School. This additional year's work is for mature students who wish advanced training, for professional journalists who seek graduate level instruction, for those intending to prepare themselves for research in the field of communications, and for teachers of journalism.

For qualified students who seek the doctor of philosophy degree in one of the social sciences or one of the other approved areas of study, the School provides a minor or double minor in journalism.

Accreditation of the School

THE UNIVERSITY OF MINNESOTA School of Journalism has been accredited in seven sequences, or areas of specialization, by the American Council on Education for Journalism. Only one other school of journalism in the country offers as many sequences accredited by the council.

These seven sequences are: News-Editorial, the Weekly and Community Newspaper, Advertising Specialization, Radio Journalism, Magazine Writing and Editing, Agricultural Journalism, and Communications and Public Opinion.

This means that seven areas of journalistic work in which a student may specialize at the University of Minnesota meet the standards established by the council.

The council is sponsored by the Association of Schools and Departments of Journalism, the American Newspaper Publishers Association, the Inland Daily Press Association, the American Society of Newspaper Editors, the National Editorial Association, and the Southern Newspaper Publishers Association.

Accrediting committees of the council visited the schools, attended classes, inspected facilities, interviewed faculty members and students, and surveyed employers of graduates by questionnaire. The committees rated the schools on such points as objectives, curriculum, scholastic standards, competence of instructors, building and equipment, student accomplishment and morale, and student-faculty relations.

An instructor in a news-writing course gives a student advice on handling a news story.





Students set type by hand in typography laboratory.

Why Choose Journalism?

ON WHAT BASIS should you decide to make journalism your career?

Successful journalists—newspaper men and women, magazine, radio and advertising writers, business managers, public relations and public opinion specialists, and others—have a number of characteristics in common: They are intelligent and imaginative; they have a knack for writing, and the energy, ambition and sound-headedness to exercise it; they take pride in meeting responsibility; they have a deep interest in their fellow men, and in the world in which they live.

Not all, of course, have every one of these characteristics. But most journalists combine a number of them.

If you contemplate "going into journalism," you would do well to ask yourself how you meet these qualifications. You may have found in high school writing, or in high school publication work, or amateur journalism, or as a novice free lance, that you have a bent for journalistic work and a liking for it. You would be unwise, certainly, to seek to become a journalist merely because it seems to be an interesting career—which it is, for those who are qualified. You should try, instead, to determine that you have not

only the desire, but also some of the special capacities a journalist needs.

You will find guideposts in your precollege schooling, in your special interests and activities, in the advice of competent counselors. Members of the School of Journalism faculty are at all times available, in their offices or by mail, for consultation with prospective journalism students, and will advise them. The Student Counseling Bureau of the University offers a number of vocational interest and aptitude tests that are helpful.

In high school, it is usually best for the prospective journalist to take a general or college preparatory course. You will find it desirable to work on school publications and in other forms of amateur journalism. You should learn to use the typewriter. You will improve your preparation if you read widely and wisely, and if you take an interest in school activities and in public affairs.

Pre-Journalism Program

THE TERM "pre-journalism student" at the University means the student who has not yet completed the basic courses to qualify him for work at the junior and senior level in advanced journalism courses. Usually it refers to freshmen and sophomores—those in the Junior College—who intend to become journalism majors in their last two years. It may, however, also refer to "adult special" students seeking journalism major work, or to those who enter the University from other colleges or universities with standing that admits them to Senior College, but who have not completed preliminary requirements for advanced courses.

Admission to the College of Science, Literature, and the Arts, of which the School of Journalism is a part, may be gained by examination, by certificate from high school, by work at other institutions, or by qualification as "adult special" students. Full information on admission is presented in the *Bulletin of General Information* of the University, which may be obtained from the Office of Admissions and Records.

In his freshman year, a student usually undertakes work in English composition, a modern foreign language, and social and natural sciences. This is all in the nature of groundwork for studies he is to undertake later. He may also take courses in "How to Study," personal hygiene and other fields. In Junior College, as in the more advanced work, every student's course program is an individual matter, designed to fit his particular needs. Every

student is urged to seek advice and help from a journalism faculty member in designing his Junior College program.

Not until he's a sophomore does the student enter his first journalism course, Introduction to Reporting. What he takes after that depends on his choice of a specialization. To specialize in the news, radio, magazine, or public opinion sequences, he may meet the Junior College requirements under either of two plans:

PLAN I

Freshman composition or its equivalent; advanced writing

Four quarters of a modern language

American Government and Politics; American History

Ten credits in a natural science

Introduction to Reporting and Newspaper Reporting

Additional elective credits to make up the minimum of 84 required for admission to the Senior College.

PLAN II

Freshman composition or its equivalent; advanced writing

Introduction to Reporting and Newspaper Reporting

Eighteen credits in the social studies

Eighteen credits in the natural sciences

Eighteen credits in the humanities

Additional elective credits to make up the minimum of 84 required for admission to the Senior College.

Junior College requirements for a journalism major with specialization in the field of the weekly and community newspaper may be met under either of the two plans, except that social studies must include basic psychology and economics courses.

The student who plans a journalism major with advertising specialization may meet the Junior College requirements under either of the two plans, except that Principles of Advertising is substituted for Newspaper Reporting, and basic psychology and economics courses must be included among the social studies.

Because assigned work in journalism courses requires typing ability, prejournalism students who cannot type 35 words a minute will be required to enroll in a typewriting course.

The two Junior College years are considered not only a period during which students lay the groundwork for their advanced and professional courses, but also an opportunity for testing their fitness for journalistic work. The School of Journalism makes every effort to aid those who are qualified for journalistic careers to prepare themselves in the best possible manner, and to help those not fitted for work in this highly competitive field to find out that fact soon enough to seek another field of specialization.

The Major May Choose . . .

THE JOURNALISM major student at the University of Minnesota devotes a little less than half of his time during his last two years—Senior College years—to professional journalism courses. The remainder of his time goes to studies in other fields that give him the rounded general education a journalist needs.

Specifically, a journalism major ordinarily takes from 27 to 45 of his 90 Senior College credits in the School of Journalism. The number varies according to the type of journalistic work he chooses to specialize in.

In addition, each student must have a "minor" of 15 credits in one field, or two "minors" of nine credits in each of two fields.

The journalism major plans his Senior College program around one of several specialized sequences. They are:

News-Editorial Sequence: six credits each of News Editing, History of Journalism, and Interpretation of Contemporary Affairs; three credits each of Newspaper and Advertising Typography, Magazine Writing and Editing, Reporting of Public Affairs, Communications Problems; and nine elective journalism credits.

Advertising Specialization Sequence: six credits of Newspaper Advertising; three credits each of News Editing, Newspaper and

Many journalism students get experience in the busy city room of the MINNESOTA DAILY.



Advertising Typography, Graphic Arts, Magazine Writing and Editing, and Advertising Copy Writing; three credits of Psychology of Advertising in the psychology department; six credits of Survey of Marketing and Advertising in the School of Business Administration; and six elective credits in journalism.

Management Specialization Sequence: three credits each of News Editing, Newspaper and Advertising Typography, Graphic Arts, Magazine Writing and Editing, Advertising Copy Writing, Newspaper Advertising, Circulation and Newspaper Management, Weekly Editorial Administration, and Current Newspaper Problems, and fifteen elective credits in journalism.

Agricultural Journalism Sequence: three credits each of Newspaper and Advertising Typography, Magazine Writing and Editing, Weekly Editorial Administration, Newspaper Advertising, History of Journalism, Current Communications Problems; six credits each of News Editing and Interpretation of Contemporary Affairs; three credits each of Agricultural Journalism and Agricultural Economics; and three elective credits in journalism. Other courses prepare the student in this sequence in selected specializations in agriculture or allied fields.

Home Economics Journalism Sequence: three credits each of Newspaper and Advertising Typography, Problems in Radio Writing, Magazine Writing and Editing, Public Relations, Advertising Copy Writing, History of Journalism, and The Newspaper in a Dynamic Society; three credits of Child Care and Training; six credits of Home Management; twelve elective credits in journalism; and fifteen elective credits in Home Economics.

Radio Journalism Sequence: same requirements as the news editorial sequence, with electives chosen from among three credits each of Radio News Writing, Problems in Radio Writing, Radio Advertising, and Development of Radio Communications.

Magazine Journalism Sequence: same requirements as the news editorial sequence, with the additional requirement of three extra credits in Magazine Writing and Editing.

Communications and Public Opinion Sequence: same requirements as the news editorial sequence, with electives chosen from among Communications Agencies and Public Opinion, Mass Communications, Media Analysis, Projects in Media Analysis.

Public Relations and Public Opinion: Recommended courses include Development of Radio Communications, News Photography, Public Relations, Newspaper Advertising, The Newspaper in a Dynamic Society, Communications Media Analysis, Communication Agencies and Public Opinion.

For Graduate Studies . . .

THE SCHOOL OF JOURNALISM offers a program of graduate study leading to the master of arts degree. It also offers a minor or double minor to qualified persons who are candidates for the doctor of philosophy degree in a social science or other approved field. Students desiring to do graduate work for the M.A. and Ph.D. degrees must register in the Graduate School.

Requirements for the M.A. degree with a major in journalism include an undergraduate background of a satisfactory number of basic journalism courses. In journalism, a minimum of 15 credits, including Reporting, News Editing, and Magazine Writing and Editing, is required. Additional credits to make up a total of 27 should be chosen from among courses in English, English composition, and political science, economics, history, or sociology.

Candidates should consult the *Bulletin of the Graduate School* for the university requirements for the M.A. degree under Plan A or Plan B. In either case a reading knowledge of at least one foreign language is required.

For a Minor Sequence . . .

MINOR sequences are offered for students in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine, the School of Business Administration, the College of Education, and the Institute of Technology. For registration in these sequences, minors should consult journalism advisers.

The School Has Grown Through 35 Years

INSTRUCTION in journalism at the University of Minnesota has kept pace with the social and technological changes that have taken place since the first news writing course was offered by the University forty years ago. It was an elementary course, and it was not repeated. But in 1915, William P. Kirkwood inaugurated the reporting work that laid the foundation for the present School of Journalism.

The single course of 1915 grew slowly to a total of eight or nine courses; and in 1922 the Board of Regents of the University established the Department of Journalism as a part of the College of Science, Literature, and the Arts. The department's work was stimulated in 1927 when the income from the Murphy Fund became available.

This fund was established through the bequest of William J. Murphy, who for many years before his death in 1918 was publisher of the Minneapolis *Tribune*. The original bequest of \$350,000 is the third largest sum ever given to the University by an individual donor, excluding grants of educational foundations, and is the second largest grant ever made to an educational institution for the support of instruction in journalism. A portion of the principal was to be set aside, at the discretion of the Board of Regents, to erect a building for the School.

Slow but steady expansion marked the work of the department after income from the Murphy Fund became available. In 1930 Mr. Ralph D. Casey became chairman of the department. Course offerings in business management, advertising, typography, magazine writing and editing, and radio writing were added or extended in the 1930's.

Meantime, the principle on which the School's work is now based—that education for journalism consists not alone in training in journalistic techniques but also in thorough grounding in social education—was implemented through the introduction of nontechnical course work. Graduate work also developed.

In February, 1940, the department moved into William J. Murphy Hall, its new quarters named in honor of the donor. And in 1941 the Board of Regents, actuated in part by the request of the Minnesota Editorial Association, made the department a full-fledged School of Journalism.

Since World War II, the School has met the demands of greatly increased enrolment while expanding its services to the people of Minnesota. Postwar enrolment in the School increased in greater proportion than that of the University as a whole, necessitating that the faculty be increased to almost twice its prewar size. At the same time, the curriculum was expanded to provide increased opportunity for specialization in the various areas of communications study.

The postwar years have also seen the School undertake sponsorship of three annual short courses: one for radio news editors, another for industrial editors, and a third for daily news executives. These are in addition to the annual short course for weekly editors, a Minnesota institution more than 30 years old. A further service to journalism and to the state is provided by the Research Division of the School, established in 1944, to conduct fundamental and applied research in communications problems.

The Faculty

THE FACULTY of the School of Journalism is headed by Mr. Ralph D. Casey. He is a member of the American Council on Education for Journalism, and has also served as editor of the *Journalism Quarterly* for ten years, and as a member of the UNESCO Commission on Technical Needs in Press, Radio, and Film.

Gifts for a special library honor the memory of Thomas Heggen, the author of "Mister Roberts" and a graduate of the School.





Current files of leading newspapers are available to students in Murphy Hall library.

Without exception, the members of the faculty combine backgrounds of professional experience and academic achievement. Several hold leading positions in the national journalism teachers' organizations.

Three of the last four national awards for research in journalism, made annually by Sigma Delta Chi, professional journalism fraternity, have been won by members of the School's faculty.

Staff members are authors or editors of many books, articles, and other treatises in their fields. The faculty includes:

Ralph D. Casey, Ph.D.
Thomas F. Barnhart, M.A.
Mitchell V. Charnley, M.A.
J. Edward Gerald, Ph.D.
Edwin H. Ford, M.A., M.S.
Fred L. Kildow, M.A.
Charles E. Swanson, Ph.D.

Edwin Emery, Ph.D.
Eugene F. Seehafer, M.A.
Alexander G. Park, Ph.D.
Harold W. Wilson, M.A.
William P. Jensen, M.A.
George S. Hage, M.A.
Bob Eddy, M.A.

Publications Provide Experience

THE STUDENT publications of the University are *The Minnesota Daily*, the college paper published throughout the year; the *Gopher*, the college yearbook; the *Minnesota Quarterly*, the magazine of creative writing; and the *Technolog*, the magazine devoted to the interests of students in the Institute of Technology. The first three publications have their offices in Murphy Hall.

Most of the staff members of the *Daily* and the *Gopher* are journalism students who gain valuable experience in publications work to supplement their courses.

William J. Murphy Hall Houses the School

THE SCHOOL OF JOURNALISM at the University of Minnesota has its own building, William J. Murphy Hall, a four-story structure erected in 1940 at a cost of \$250,000. Of this sum, \$110,575 came from the trust fund established by William J. Murphy, former publisher of the Minneapolis *Tribune*; \$25,000 from the Board in Control of Student Publications, and the remainder from the Federal Government as a PWA grant.

On the ground floor are the offices of the three major student publications, *The Minnesota Daily*, the *Gopher*, and the *Minnesota Quarterly*; the headquarters of the National Scholastic Press Association and the Associated Collegiate Press; the offices of the School of Journalism Research Division; and the photography laboratory, a teaching unit equipped with sixteen darkrooms, a studio, a finishing room, a supply room, and individual drawer-lockers for sixty students.

On the main floor are the large journalism library and reading room, where files of major newspapers from throughout the country and the state, as well as other periodicals and reference materials, are available to the students; an exhibit room containing built-in wall exhibit cases for the display of historical and current journalistic media, and the Heggen Memorial Library; an auditorium with a seating capacity of 242, equipped for sound motion pictures and radio broadcasting; and the central offices of the School of Journalism and the offices of faculty members.

Two news editing laboratory rooms, one for the courses in radio writing and the second for newspaper editing, occupy the north end of the second floor. Both laboratories are equipped with press association printer teletype machines for the use of Associated Press and United Press copy. This floor also includes the reporting laboratory, a typing room where typewriters are available to the students, and additional offices for staff members.

The third floor houses a combined radio-writing laboratory and fully-equipped broadcasting studio, the advertising laboratory, the typography laboratory for editing and advertising, and two large classrooms.

Two "tower" rooms comprise the fourth floor—one a large lecture room, and the other a seminar room, with extensive shelf space for materials in current use by graduate students.

J-Students Have Chance to Win Scholarships

STUDENTS in journalism have the opportunity to win a number of scholarships, honors and awards for meritorious achievement in course work and in service to the School of Journalism and the university community.

Two scholarships of \$150 each are offered each year by the Minneapolis and St. Paul Advertising clubs to precollege students who intend to study advertising at the University, or to first-year students already pursuing such a course of study. The awards are made on the basis of academic aptitude, professional promise, character, financial need and leadership qualities. Applicants must be Minnesota residents.

A third scholarship is offered each year by the Women's Advertising Club in the amount of \$100 for the junior woman who has maintained the highest scholastic average as a sophomore.

Two annual cash scholarships are open to senior journalism majors. One is the \$100 Northwest Daily Press Association award, given each year to the senior, either man or woman, who is judged to have attained outstanding scholarship and given promise of journalistic achievement. The other is the \$50 Theta Sigma Phi award, given to a senior woman on much the same basis.

The John P. Coughlin Memorial Loan Fund, established in 1945 to honor the former Waseca, Minnesota, publisher, provides



An advertising student ponders a problem of layout.

funds against which journalism majors may borrow to finance their education.

Among the scholastic honors which journalism students may win are: election to Phi Beta Kappa, national honorary scholastic society; election to Kappa Tau Alpha, national scholarship society in journalism; graduation with *summa cum laude*, *magna cum laude*, and *cum laude* honors; the annual Sigma Delta Chi scholarship awards to the highest ten per cent of the graduating journalism majors; and the annual honors to all students who maintain scholastic averages of B or better.

Two annual service awards for journalism students have been established by the two professional journalism societies among journalism majors, the Theta Sigma Phi service plaque, to the graduating woman who is adjudged "of most service to the society," and the Sigma Delta Chi award to a student or faculty member who has rendered outstanding service to the school or the profession during the year.

Journalism students of good scholarship and of journalistic promise are eligible for membership in these two societies, Sigma Delta Chi for men, and Theta Sigma Phi for women.

Membership in the Advertising Club is open to journalism students specializing in advertising.

All-campus honor societies in which journalism students may win membership are: Mortar Board for women; Iron Wedge or Grey Friars for men; and Delta Phi Lambda, creative writing society, for both men and women.

Placement Committee Helps Find Jobs

THE STAFF of the School of Journalism recognizes and assumes a responsibility for aiding in the placement of graduates and undergraduates in journalistic positions for which they are qualified and trained. The placement function of the School is assumed by a faculty committee, members of which are thoroughly familiar with the requirements of specific positions and with the qualifications of individuals seeking placement.

During the years the placement committee has served, it has placed more than 1,500 persons in positions of responsibility on staffs of daily and weekly newspapers, press associations, radio stations, advertising agencies, retail store advertising departments, magazines, trade publications, house organs, and publicity agencies, and in journalism-related fields.



News photography students use the School's speed graphics on picture-taking assignments.

Services Include Research and Annual Short Courses

AS A PART of a university which boasts a distinguished record of service to its state, the School of Journalism has contributed a number of functions in the field of communications to the people of Minnesota.

In January, 1944, the Division of Research was established in the School to test the theory and practice of communicating ideas and information to the mass audience through the printed and spoken word. Made possible by an initial grant from the Minneapolis *Star* and *Tribune*, which was supplemented by funds from university research sources, the unit was the first of its kind established in an American school of journalism.

Since its establishment, the division has conducted more than 100 studies on problems of polling, content analysis, reader interest, radio audience, consumer attitudes, and writing and editing. The division serves as technical consultant to the Minnesota Poll, and also as a laboratory for graduate and undergraduate students specializing in communications research. Professor

Charles E. Swanson, director of the division, is aided by expert statisticians and trained interviewers and tabulators.

Another type of service which the School renders is that of conducting annual "short courses" whereby men and women already active in the communications field can meet to discuss common problems with outstanding leaders in their various specialties. The oldest of these short courses is that of the editors of weekly newspapers, which the School has sponsored with the University Department of Agriculture for more than thirty years. Since the war, similar short courses have been instituted for radio news editors, industrial editors, and daily news executives of the Upper Midwest. These meetings are open to journalism students, thereby providing them the opportunity to hear problems and experiences discussed by veterans in the communications field.

The School also assists in sponsoring the annual conventions of the Minnesota High School Press Association, and conducts a biennial short course for high school journalism teachers.

Another service in which the School takes pride is the co-sponsorship, with the Newspaper Guild of the Twin Cities, of a series of annual lectures honoring guild members killed in World War II. In the four years since the series was established, problems of the press have been discussed by such distinguished authorities and critics as Marquis Childs, Thomas L. Stokes, James B. Reston, and Reinhold Niebuhr.

Teams Work on Weekly Papers

JOURNALISM STUDENTS specializing in the weekly newspaper field have the opportunity during their junior or senior years to put out an issue of a Minnesota weekly newspaper. The students are organized in teams of from two to four members, each of which is assigned to one of the several weekly newspapers cooperating in the program.

The teams gather and write all the news, write editorials, write and sell all the advertising, and plan and make up the pages for the week's edition. This opportunity comes in the spring vacation, during which the students take up temporary residence in the town of the paper to which they are assigned.

School Offers These Courses

Junior College

10. Photography.

Fundamental principles of photography: the use of cameras, developing, printing, and other elementary techniques. Mr. Liebling.

11. Introduction to Reporting (for students minoring in journalism).

This course offers training in writing for the press to nonmajor students whose vocational pursuits may later require some knowledge of what constitutes news and some practice in writing timely information for publication. The course is open to journalism minors in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine, the Institute of Technology, and the School of Business Administration. Mr. Ford.

13. Introduction to Reporting (for majors).

Fundamentals of news gathering and news writing. News analysis, news sources, methods of news gathering. Style and structure of news stories. Training in comprehensive coverage of events and accuracy in their recital. Ethical aspects of reporting and news presentation. Mr. Charnley, Mr. Hage.

14-15. Newspaper Reporting.

More advanced reporting problems, both in news gathering and news writing. The writing of feature and interpretative articles. Part of the course is devoted to newspaper law—rights and privileges of the press, libel, copyright, news property rights, law of fair comment and criticism, legal aspects of the freedom of the press. Mr. Charnley, Mr. Hage.

18. Principles of Advertising.

A basic foundation for beginners in advertising. Theory, principles, and functions of advertising. Relation of advertising to modern business organization and its place in marketing and distribution. Choice of appeals and media. Appropriations, schedules, campaigns. A survey of copy, layout, testing, and the laws affecting advertising. Mr. Seehafer.

41. Editing for Nonmajors.

Newspaper copyreading methods are studied and practiced as basic training. These methods are then amplified to fit the needs of various types of publications, including the trade and class press. Practice is given in proofreading, correcting and condensing copy, writing headlines and captions, and planning newspaper and magazine page layouts. The course is designed for majors in business, agriculture, education, and technology who may have editing responsibilities in connection with their vocational activities. Mr. Ford.

Senior College

51-52. News Editing.

Instruction and practice in editing news copy, proofreading, headline writing, and news evaluation. News display and makeup. After learning the fundamentals of copyreading, students are given telegraph desk experience in editing the news report of either the Associated Press or the United Press received in the laboratory on telegraph printer machines. Mr. Swanson, Mr. Emery, Mr. Jensen, Mr. Eddy.

55. Advertising and Newspaper Typography.

The principles of graphic presentation. Preparation of layouts for advertisements and printed pieces. Lectures and laboratory work teach the student how to work with type, how to handle headline forms, copy blocks, illustrations, borders, and decorations, and how to meet other typographical and makeup problems. Practical work in hand composition and training in the identification of type families and sizes and a knowledge of the appropriate uses of such types. Printing and engraving processes. Mr. Barnhart, Mr. Wilson.

58. Advanced Typography.

Individual projects in newspaper makeup and typography, magazine and house organ makeup and typography, advertising layout and typography, booklet planning, wood and linoleum illustrations, and a wide range of related graphic arts subjects. The stress throughout is upon experimental projects. Mr. Barnhart.

59. Typography Workshop.

An opportunity for qualified students to conduct original experimentation in esthetic and functional factors of typographical design; individual projects in brochures, magazine layout, book design, and display printing of many kinds. Mr. Wilson.

65. Graphic Arts: Processes.

This is one of three related courses of special interest to journalism students specializing in advertising.* Various printing and engraving processes are studied, including letterpress, planography, intaglio, electrotyping and stereotyping. Inks, papers, the use of color, bindings and miscellaneous graphic arts processes. Field trips to printing, engraving, and electrotyping plants. Mr. Wilson.

66. Pictorial Journalism.

Special problems of photography for newspapers and magazines with emphasis on the techniques of picture editing and of the "picture-story." Students are assigned newsworthy projects in the field. They are required to develop, print, and enlarge their "shots" in the photography laboratory under the direction of the instructor. Sixteen darkrooms, a studio, and a finishing room are available for use in Murphy Hall. Mr. Kildow.

* The other courses are Elementary Principles of Design, offered in the Institute of Technology, and Advanced Advertising Procedure, offered in the School of Business Administration.

67. Radio News Writing.

A course in radio news processing, most emphasis of which is laid on preparing straight news broadcasts. Students edit and prepare for broadcasting a daily fifteen-minute news program which goes out over Station KUOM, using a full news wire service as basis. Practice also in news commentary, news interviews, use of recorders, reporting special events and television news. In this course and in 68 (below), students make use of the completely equipped radio studio in Murphy Hall. Mr. Charnley, Mr. Jensen.

68. Problems in Radio Writing.

Practical study and assignments in the various fields of radio writing: dramatic scripts, public affairs, education, and for television. Training in fundamental broadcasting production problems, program-planning, and radio station organization. Mr. Charnley.

69. Newspaper and Magazine Articles (for minors only).

The technique of writing feature articles for newspapers and magazines. Study of markets open to free-lance writers, and analysis of published articles. Students are required to submit for publication the articles they prepare in the course. Mr. Ford.

73-74. Magazine Writing and Editing.

73: Preparation of the student for work as a free-lance writer and as a magazine editor. Study of the tasks of the magazine editor, the practices in typical magazine editorial offices, both as training for students interested in editing and as basis for those interested in the writing job. Study of magazine markets and analysis of published articles. Technique of the magazine article. Emphasis is placed upon writing for publication, and several articles are written by each student during the quarter. Mr. Charnley, Mr. Kildow, Mr. Hage.

74: A project course in which students put into further practice the principles and methods studied in 73. Each student undertakes several major assignments, whether in magazine writing or in magazine or book editing, according to his vocational interests. Mr. Charnley.

76. Critical Writing.

The theory of criticism. Lectures and class discussions on critical standards as they relate to the problem of reviewing books, plays, concerts, and fine arts, and motion pictures for periodical publications. At least one review each week is required of the student. Members of the class read and report on books and articles dealing with the theory and practice of criticism. Mr. Ford.

78. Public Relations.

A survey of the techniques and practices of workers in the public relations field. The function of the public relations counsel and publicity expert and the relationship of the public relations function to the press, to employer and employee, consumer and citizen. The production of the public relations programs and campaigns for industry and business organizations, social work agencies, educational institutions, and governmental agencies. Mr. Emery.

82. Supervision of School Publications.

This course is for those who plan to serve as faculty advisers of school publications, in high schools or colleges, and others who will undertake educational publications work. Publications considered are the newspaper, yearbook, and magazine. The editorial content, staff organization, editing, typography, makeup, business management of these publications are stressed. The course draws upon the experience of those in charge of the National Scholastic Press Association and its many member publications. The N.S.P.A. is associated with the School of Journalism, occupying offices and library in Murphy Hall. Mr. Kildow.

86. Advertising Copy Writing.

A study of advertising media and advertising appeals. Training in techniques of writing advertising copy for newspapers, magazines, direct mail, posters, and brochures, and in planning of advertising campaigns. Mr. Seehafer.

87. Radio Advertising.

The relation of radio advertising to the station, the network, and the station representative. The part of sponsors, advertising agencies, radio talent, and transcription companies. Problems in program selection, time buying, and program ratings. Preparation and presentation of radio advertising copy. Radio advertising standards and ethics; self-regulation and listener-response. Mr. Seehafer.

89. Radio and Television Station Administration.

The broadcasting station as a factor in community life. Administrative problems in programming, traffic, time sales, and management. FCC and other regulations affecting station operation. Practice problems in license application, public service programming, etc. The course draws upon the experience of the administrative staff of Station KUOM. Mr. Paulu.

90. Mass Communications and the News (for non-majors only).

How the news gets to the public—by newspaper, radio, periodical, and movie. Analysis of news gathering and presentation methods. Economic, social, and political influences on the communications media. Studies of individual newspapers, columnists, commentators, and the like. Mr. Charnley.

93. Weekly Editorial Administration.

The news and editorial and publishing problems peculiar to the weekly newspaper, based upon an analysis of the social configurations of a rural community. Coverage of local and trade territory news. Features, syndicates, special pages, country correspondence, editorial budget and costs. Editorial leadership and responsibility. Mr. Barnhart.

94. Newspaper Advertising.

The organization of the advertising department of the newspaper. Development of copy and layout. National advertising accounts and a study of the local advertiser's problems. The newspaper's rate structure. Selling advertising. Individual criticism is given on all advertising copy

written as laboratory practice. This is supplemented by experience in selling advertising for *The Minnesota Daily* and for Minnesota weekly papers as members of publishing teams during the spring vacation. Mr. Barnhart.

95. Circulation and Newspaper Management.

The over-all management problem, including financing, sources of income, publication costs, and relative costs of editorial, business, and mechanical departments; salary and wage schedules; and newspaper accounting. Commercial printing, inventories, and plant arrangement. The sales, distribution, promotion, and administrative problems of the circulation departments of weekly and daily newspapers. Mr. Barnhart.

101. The Reporting of Public Affairs.

Instruction and practice in reporting the civil and criminal courts; municipal, county, state, and federal offices and agencies, legislative and administrative; politics and labor. News articles are written by student reporters who attend trials, hearings, and legislative sessions. Students are expected to gain some expertise in judicial procedures and methods. Mr. Hage.

103. Literary Aspects of Journalism.

Established authors who possess a dual relationship to letters and journalism are considered in this course. Among others, the following are included: Defoe, Addison and Steele, Franklin, Freneau, Bryant, Whitman, Dickens, Mark Twain, Bret Harte, Howells, Bierce, Crane, Kipling, Lafcadio Hearn, Dreiser, and Hemingway. Weekly sketches are written by students. The purpose of this writing assignment is to encourage creative work other than that required for informative articles of timely interest. Mr. Ford.

104. Advanced Newspaper Advertising.

Stress is placed on copy-testing methods, market analyses, the planning of major campaigns and sales programs, and newspaper promotion. Evaluation of representative media and problems of coverage, costs, duplication, and scheduling are discussed. Mr. Barnhart.

109-110. History of Journalism.

The first term of this course deals with the early history of the press: the forerunners of the newspaper on the Continent and in England and the seventeenth and eighteenth century newspaper in England, journalism in the American colonies, in the Revolutionary Period, and during the early days of the republic. The emphasis in the second term is on the major social influences that have shaped the pattern of the American press down to the present. The effects of the democratic movement, population growth, the advances of technology, mass production and distribution, and urbanization are analyzed. The contributions of significant publishers and editors are discussed. Mr. Ford, Mr. Emery.

111. International Communications

The use of international communication systems for transmission of news and of diplomatic, cultural, commercial, and military information,

in peace and war. The relation of telecommunications and the reporting and interpretation of foreign news. International newsgathering agencies: history, development, and present status. The factors that affect the foreign correspondent and the flow of words and images throughout the world. Staff.

112. Comparative Foreign Journalism.

A study of the press in the principal foreign countries. Similarities and differences among the press systems; cultural, technological, and economic bases for differences. The group press and the popular press. Press systems compared and contrasted with the newspapers of the United States. Staff.

113. Mass Communications.

Analysis of channels and barriers between the writer and the mass audience. Emphasis upon the problems of communicating information and ideas to group and mass audiences by newspaper, radio, film, television, books, and other media. Comparative studies of content and influence. Mr. Swanson.

115. Communication Media Analysis.

Methods developed recently for analyzing the content and reader- or listenership of newspapers, periodicals, radio broadcasts, and pictures. Attitude studies and reading tests involving these media. Mr. Swanson.

118. Selected Topics in Journalism.

A: Advanced Reporting of Public Affairs. A limited number of students gain further experience in public affairs reporting, based on instruction in 109. Students are assigned, in rotation, to cover such runs as city government and agencies, county offices, state government, the legislature, and the courts. Staff.

B: Projects in Media Analysis. A limited number of students plan and carry out individual projects in analysis of communications media, based on their study in 115. Mr. Swanson.

C: Selected Readings in Journalism. Readings in selected works on the development of the agencies of communication and the practice of journalism. Interpretative theses are required, correlating the reading. Mr. Casey and staff.

120. Development of Radio Communications.

Historical and economic development of aural broadcasting, television, and facsimile; government regulation; radio and the press; radio as a social factor; aspects of listenership; broadcasting in other countries; future developments. Mr. Charnley.

121. The Press in a Dynamic Society.

This course analyzes the political environment of the newspaper, past and present, and the economic climate in which it lives. Industrialization, urbanization, and other social trends as they affect the newspaper. Patterns of newspaper ownership—private, cooperative, and subsidized—and their social evaluation. The future newspaper. Mr. Gerald.

130-131. Communication Agencies and Public Opinion.

The major agencies of communication—press, radio, television, and motion pictures—and their role in the opinion-forming process. Theories of public opinion formation and propaganda; propaganda techniques of governments, political parties, pressure groups, and other organized bodies. Mr. Casey.

140-141. Interpretation of Contemporary Affairs.

A study of major political, economic, and social developments about which the journalist must be informed and concerning which he serves as an interpreter. The course aims to unify separate social science courses as they apply to journalism and to bring these background studies to focus on current problems and on journalistic practice. Editorials and interpretative articles are written after careful initial study of authoritative sources. Mr. Gerald, Mr. Emery, Mr. Jensen.

142. Current Communications Problems.

The individual project method is used for analyses of communications problems of current importance in the light of their social, economic, and technological environment. The course is conducted in small, seminar-like groups. Staff.

150. Public Relations in Community Services.

Principles and practices of public relations and educational campaigns in public health, social work, and other community service fields. Mr. Emery.

177. Freedom of the Press and Communications Law.

The Anglo-American concept of freedom of speech and press, its development under the Constitution of the United States, and the areas of tension today. Municipal, state, and federal regulations affecting news gathering and news dissemination. The problems of international freedom of press and radio. Mr. Gerald.

For Graduate Students Only

205. Topics in International News Communications.

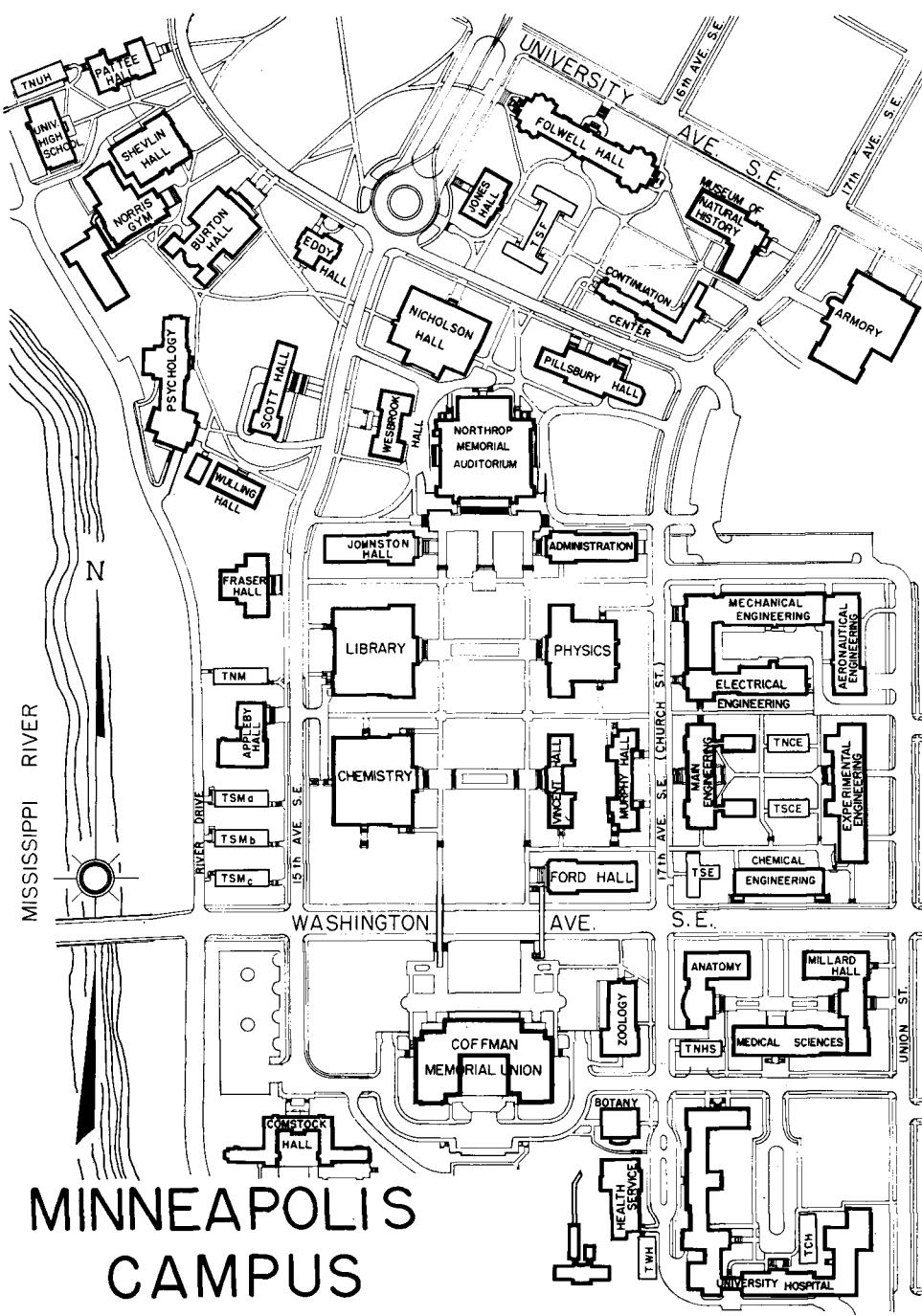
A seminar, dealing with special problems concerning the rise and development of news communications and the news-gathering agencies of the world. Mr. Casey.

208. Communications Agencies as Social Institutions.

The influence of political, social, and economic forces upon the national character and performance of press, radio, and other mass media of communications, and the examination and evaluation of their responsibility for social leadership. Mr. Gerald.

210. Research in Mass Communications Problems.

A seminar course for graduate students in communications research. Mr. Swanson.



MINNEAPOLIS CAMPUS