



# SUMMER SESSION COURSES

1947 PRELIMINARY ANNOUNCEMENT



THE *Bulletin* OF  
The University  
of Minnesota

This is a preliminary announcement of courses to be offered in the 1947 Summer Session at the University of Minnesota. It is subject to revision and change to conform with the developments in the educational needs of an increasing enrolment. We hope that you will read this bulletin and pass it on to any of your friends who may be interested.

We call your special attention to the program on Russia and the Far East and the American Studies Program.

The complete Summer Session Bulletin will be issued in March and copies of that bulletin or additional copies of the Preliminary Bulletin may be obtained by addressing the Director of the Summer Session, 707 Administration Building, University of Minnesota, Minneapolis 14.

Vol. I

No. 1

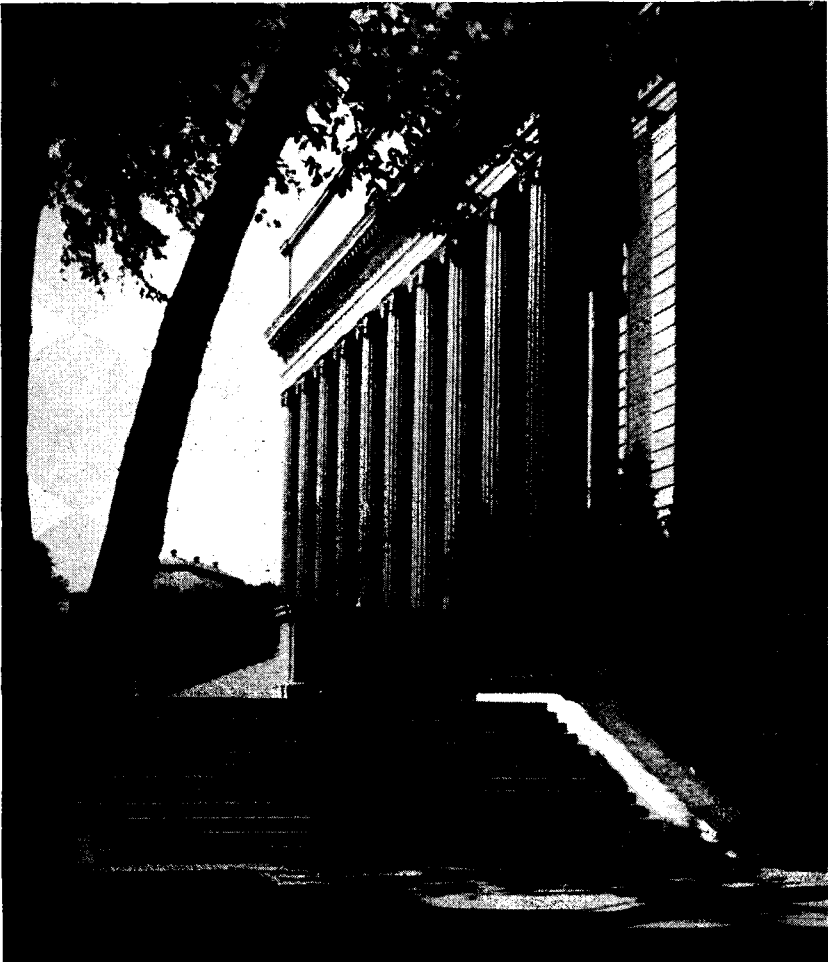
January 6, 1947

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## THE SUMMER SESSION FOR 1947

With the great influx of students since the war, every college and university in the land is called upon to operate far beyond its normal capacity in housing, classroom space, and teaching loads of its staff.

The University of Minnesota, as always, stands ready to help every qualified applicant to the limit of its capacity in training for that democratic citizenship which we believe to be the only safeguard of civilization.



Colonnade, Northrop Memorial Auditorium

## RUSSIA AND THE FAR EAST

There are few subjects of greater interest and importance to the statesmen and people of the United States than the Soviet Union and Eastern Asia and probably none on which there are sharper differences of opinion. The Summer Session of 1947 will offer an unusual opportunity for the study of these problems. The members of the university faculty who have offered some courses on Russian language, literature, and history, and on Far Eastern International Relations for a number of years, will be re-enforced by a staff of distinguished authorities from other parts of the country. Additional courses have been planned on the history of the Russian Empire and of the Soviet Union, on the relations of Russia with Turkey, the Balkan States, and with Asia; on the language, literature, education and culture of the Soviet Union; on the history and recent development of China, and on the relations of the United States with Eastern Asia. Among the visiting professors will be Cyril E. Black of Princeton, David Nelson Rowe of the Institute of International Studies of Yale, Andrei Lobanov-Rostovsky of the University of Michigan, Waldemar Gurian of Notre Dame, and Ivar Spector of the University of Washington.

## PROGRAM IN AMERICAN STUDIES

The Summer Program in American Studies, inaugurated in the 1946 Summer Session with a distinguished staff of visiting and resident professors, will continue in 1947 and, it is expected, each summer thereafter. The purpose of the program is to guide students to a broad knowledge of their own nation, as preparation for enlightened citizenship both in the United States and in world society.

In 1947 the summer program will give special attention to the place of science in the civilization of the United States. Departmental and interdepartmental courses, by resident and visiting professors, will be offered in our national history, literature, fine arts, philosophy, journalism, political science, anthropology, human geography, and sociology.

These courses carry credit both for students in the departments concerned, and for students enrolled for the B.A., the M.A., or the Ph.D. degrees in American Studies.

For further information, address Tremaine McDowell, Chairman of the Program in American Studies, University of Minnesota, Minneapolis 14.

## GENERAL INFORMATION

The University of Minnesota is located midway between the Twin Cities of Minneapolis and St. Paul on the north bank of the Mississippi River in Minneapolis. The courses in agriculture and home economics are given on the Agricultural Campus in St. Paul, three miles from the Main Campus in Minneapolis.

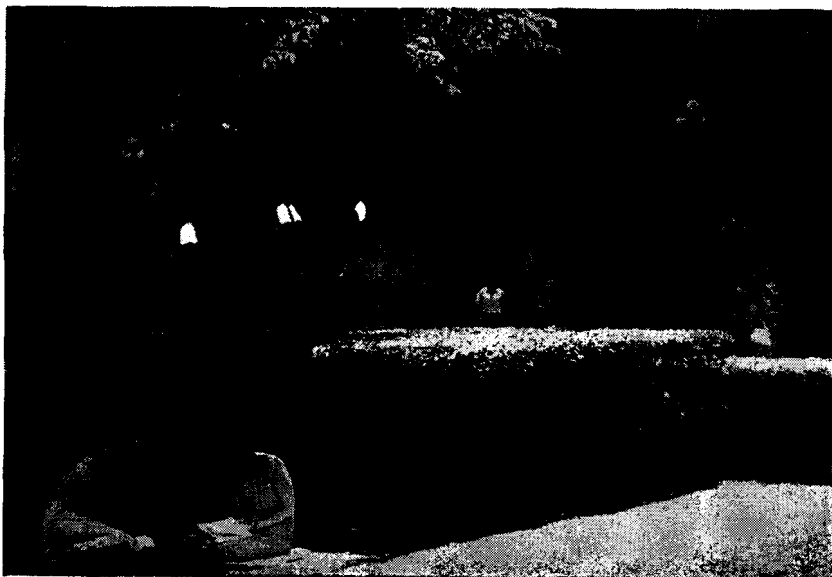
The University provides an ideal place to enjoy a profitable summer of study. It offers the Summer Session student the advantages of a great educational institution—its faculty, libraries, laboratories, observatories, and museums—and in addition the recreational and cultural resources of two large metropolitan centers. These cities combine to offer attractions for the Summer Session student that are unique with the University of Minnesota.

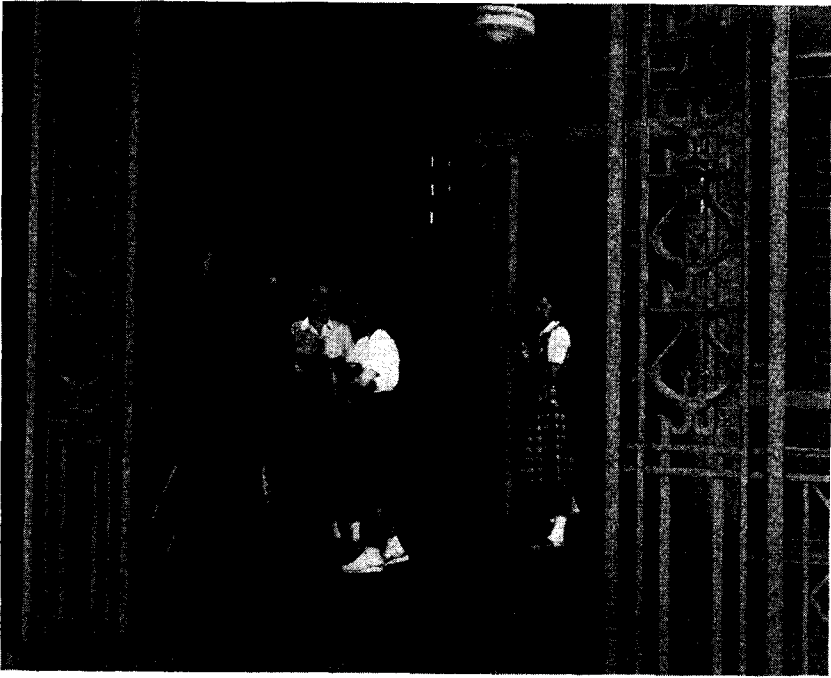
The College of Agriculture, Forestry, and Home Economics in St. Paul has its own laboratories and recreational facilities, and its campus offers all of the advantages of the Main Campus in Minneapolis, being connected with the latter by an intercampus trolley line which gives regular service free to students enrolled for classes on both campuses. The Como-Harriet interurban line connects both of the campuses with the two cities.

Courses in the various fields of biology are given at the Lake Itasca Forestry and Biological Station, located at Itasca State Park, during the second term of the Summer Session. (See page 21.)

#### DATES OF THE SUMMER SESSION

The Summer Session consists of two terms. With the exception of the Medical School, the first term of six weeks will begin with registration Tuesday, June 17. Accelerated programs are continuous through both terms. Other courses of study are complete in a single term. Classes in the first term on the Main Campus will begin Wednesday, June 18 at 8:00 a.m. Classes on the Agricultural Campus will begin fifteen minutes earlier, at 7:45 a.m.





Entrance to Comstock Hall

Registration and payment of fees for the second term close at 4:00 p.m. on Monday, July 28, and classes for this term will open Tuesday, July 29. Students registered for both terms on an accelerated program who did not pay the full quarter fee at the beginning of the first term will pay the second term fee. The Summer Session will be brought to a close on Friday, August 29.

Classes in the Medical School begin on Monday, June 30, and continue through Friday, September 12.

#### FACULTY

The instructional staff for the 1947 Summer Session numbers more than nine hundred members. The University of Minnesota takes for granted the fact that the students planning to attend its classes expect to become acquainted with, and study under, the regular faculty and therefore many of its most outstanding scholars will be present to teach and to direct research.

#### COURSES OF STUDY

More than 1,000 subjects of study will be offered during the two terms of the 1947 Summer Session. We have provided a splendid and diversified curriculum which will be of great value in enabling the summer student to gain a better understanding of the problems

of world reconstruction with which we are confronted at this time. Your particular attention is directed to our courses on Russia and the Far East and in American Studies. Teachers in particular may find in these courses the road to reorienting their knowledge and ideas. Such a reorientation may contribute to the effectiveness of their own classroom teaching.

#### LIBRARIES

Students in the Summer Session enjoy all of the library privileges of regular session students. The University of Minnesota Library is one of the finest college libraries in existence today. It includes over 1,330,000 volumes and many periodicals and pamphlets, and in scope takes in every subject in the university curriculum. Its large, airy reading rooms provide an excellent place to study, and in addition there is a separate floor with rooms for seminars and discussion groups for graduate students and faculty.

On the Agricultural Campus the library of the Department of Agriculture houses an outstanding collection of material on agriculture, home economics, and allied sciences, as well as many books of general interest.

There are also several departmental libraries on both campuses containing special collections of value to students.

The Minneapolis Public Library, the St. Paul Public Library, the Minnesota Historical Society, and the James Jerome Hill Memorial Library of St. Paul are also within convenient distance of either campus by streetcar or automobile.

*The Library Handbook* contains all necessary information regarding library hours, rules, and other matters essential to the profitable use of the library. Copies of this handbook may be had gratis upon application at the library.

#### HOUSING AND FOOD SERVICE

**Ada Comstock Hall**—Excellent living accommodations are provided in Ada Comstock Hall, a residence hall for women. The building, which is modern in every way, faces the Mississippi River and is adjacent to the Coffman Memorial Union. It accommodates 378 students.

Reservations should be made as far in advance as possible. Application should be sent direct to Ada Comstock Hall, University of Minnesota. All applications for Summer Session residence will be filed in order of the date received. Minnesota residents will be given priority ratings until May 1 after which date out-of-state applicants will be assigned to the remaining vacancies. No application will be recorded until a completed lease is filed. This lease will hold the room until the day after the opening of the Summer Session. A \$5 deposit will be required at the time a definite room assignment is made. Refund of this deposit will be made only when cancellation

is received before June 1. For additional information write the Director of Comstock Hall, University of Minnesota, Minneapolis 14.

**Sanford Hall**—Sanford Hall will not be open next summer. It was used by the army during the war years and replacements are necessary before the Hall can be opened next fall.

**Meredith Hall, University Farm**—Women taking regular work during the first term of the Summer Session, either on the Main Campus or on the Agricultural Campus, may obtain rooms in Meredith Hall, Agricultural Campus. There is convenient streetcar service to the Main Campus. The dormitory contains a few single rooms; other rooms are intended to accommodate two persons. Necessary bedding is furnished.

The rates during the summer are as follows: single rooms, \$20 per term; other rooms, \$16 per term per occupant.

Applications for rooms, accompanied by a \$2 deposit, should be made to the office of the superintendent, School of Agriculture, University Farm, St. Paul 1, Minnesota.

Assignment of rooms will be made at the time of registration in Meredith Hall. Payment for the first term of the Summer Session must be made to the cashier at the beginning of the first week. The dormitory will be open Monday, June 16. Rooms will not be available during the second term.

During the first term of the Summer Session, residents of Meredith Hall may have access to cafeteria service at the Agricultural Campus cafeteria. This cafeteria will be open for three meals on five days of each week, Monday through Friday, and for dinner on Sunday.

**Pioneer Hall**—This residence hall for men is accepting applications for the Summer Session of 1947. Priority will be given applicants who are veterans of World War II. Double-deck beds are used to accommodate as many students as possible. Three meals a day are included in the board and room contract. For additional information write directly to Pioneer Hall, University of Minnesota, Minneapolis 14.

**The Cooperative Village**—The Cooperative Village, now located on University Avenue near Sanford Hall, will be open for the first term of the Summer Session. The houses have been remodeled and redecorated and offer attractive, low-cost housing. Rates for the term will be one-half the regular quarter rates. A deposit fee of \$5 will be required at the time that the room is assigned. Residents are required to furnish their bedding, towels and rugs and curtains as desired. Housework in the individual units must be done by the residents in the house.

**Private Residences**—Most men and women entering the University will live in rooming houses and private homes. A considerable number of rooms are usually available. Since householders list all vacancies with the Student Housing Bureau, Room 202, Eddy Hall,





Pioneer Hall

students should contact this agency to secure such accommodations. These facilities are University inspected and approved.

All students are required to live in university approved residences, and those taking rooms elsewhere must apply immediately to the director of the Student Housing Bureau for approval.

All students enrolling for the first time in the University are especially urged to avail themselves of the service offered by the Housing Bureau.

**Graduate School Accommodations**—There are thirty-seven units of prefabricated housing available for graduate students who are married. These are one-room apartments approximately twenty by twenty-four feet, furnished with the exception of bedding, linen, dishes, silverware, and kitchen utensils. Contingent upon receipt of materials, apartments will have toilet, lavatory, and sink. Shower baths are available in the community building close by. Laundry facilities are also offered in the community building.

Units are now leased on a twelve-month basis, with the possibility of some of them being sublet for the Summer Session. Graduate students interested in residence at University Village should communicate with the Director of Men's Residences, Room 3, Administration Building, University of Minnesota, Minneapolis 14, regarding application, prices, and other details.

Requirements for residence in University Village:

1. Must be carrying a normal load in the Graduate School.
2. Total family income must not exceed \$2,100 during the one year of residence. (Residence is limited to one year.)
3. Veterans with children will be given first priority.



Coffman Union Fountain Grille

**Food Service**—In addition to the dining halls provided in the dormitories and residence halls, the Union offers a variety of accommodations. The cafeteria, luncheonette, and fountain grille feature rapid service. Well-prepared food, moderate prices, and quick, efficient service typify all Union dining accommodations. The commuter's lunch room will be open for those carrying lunches.

#### **STUDENTS' HEALTH SERVICE**

The Students' Health Service conducts a health program during the Summer Session on the same basis as any other quarter of the year. A dispensary and hospital are maintained exclusively for students. The same staff of physicians, dentists, and nurses is on duty as during the rest of the year. The students' hospital provides hospitalization for students whenever necessary. Home calls are made in case of emergency.

#### **SUMMER RECREATION**

The University of Minnesota is ideally situated for a program of healthful recreation. A definite program is planned each year to give the Summer Session student a maximum of recreational activity for a minimum of expense. The Twin Cities, with their parks, lakes, art and music centers, libraries, and museums, offer many fine attractions for the summer visitor.

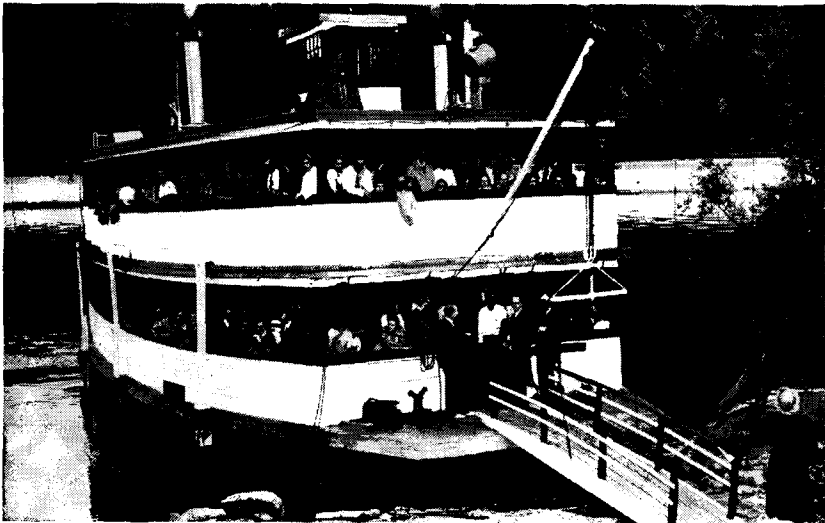
Included in the recreation program are regularly arranged weekly social dances and instruction periods in social dancing, square dancing, contract bridge, and bowling. Musical features include music listening hours and a music lending library.

A number of excursions to points of historical, industrial, educational, or purely recreational interest in the vicinity of the Twin Cities also are made each summer. These tours are usually arranged for Mondays, Fridays, and Saturdays, with the cost only the necessary fare for transportation.

The physical education plant at the University of Minnesota is one of the finest in the United States. Its facilities for healthful exercise are many and varied. These may be summarized briefly as follows: recreation fields; an eighteen-hole golf course; three gymnasiums containing five swimming pools—Cooke Hall for men, the Norris Gymnasium for Women, and the Gymnasium on the Agricultural Campus; Northrop Field, which contains facilities for baseball, track, and diamond ball; 25 tennis courts; and space for other sports such as badminton, horseshoes, handball, squash, table tennis, and archery.

A program of tennis and golf tournaments as well as other competitive sports is arranged each summer.\* In addition, the swimming pools with attendants and instructors in charge are available at scheduled times for men in Cooke Hall and for women in Norris Gymnasium and the Farm Gymnasium. All of these facilities are available for both men and women and most of them with no extra charge except for towel service.

\* A daily sports hour is arranged at the Norris Gymnasium for Women for the enjoyment of women students; activities such as aerial darts, badminton, and table tennis will be available.



Donna Mae Boat Trip

**Tennis and golf tickets**—Tennis tickets will be issued to regularly enrolled students of the Summer Session upon payment of a fee of \$1 and presentation of the bursar's receipt for fees. Such tickets entitle the holder to 15 sessions of play. Without tickets, a charge of 25 cents per session of play is made for the use of the tennis courts. Golf tickets are issued in the same manner without charge, but a greens fee of 50 cents is charged for a single round, or ten rounds for \$4.50. Before 10:30 a.m., except Sundays, and after 5:00 p.m. the charge will be 35 cents per round. Application should be made at the golf course clubhouse.

#### SPECIAL FEATURES

One of the principal features of the Summer Session program is the series of weekly convocation addresses by speakers of more than usual prominence. Scientists, literary figures, artists, and observers of national and international affairs are among those who visit the campus to address the Summer Session audiences.

Performances of legitimate drama have become an outstanding feature of the Summer Session. The University Theatre, a university dramatic student organization, functions throughout the summer and demonstrates the success attainable with student actors. The very best of stage equipment and facilities is provided for these productions.

Another weekly feature which is popular with the student body is the Newsreel Theater, directed by the Department of Visual Education of the University of Minnesota. Motion pictures of current events, travel pictures, and educational films of various kinds form the subject matter of the theater. This department usually carries a program of *Films for Teachers* of a type which can be used in the classroom. A program of *Information and Interest Films* is regularly shown in the Coffman Memorial Union Ballroom.

#### COFFMAN MEMORIAL UNION

The Coffman Memorial Union building has been designed to provide for the social life of university students. Summer Session students will find it a pleasant respite from the rigors of classroom activities. All students are eligible to enjoy the informal, friendly spirit which dominates the Union. Quiet and comfortable lounges, colorful dining rooms, and interesting recreation rooms make the Union the natural "living room" for members of the university family. Here spacious, airy rooms overlooking the broad Mississippi provide a pleasant setting for informal social and recreational experiences.

**Recreation facilities**—Popular with men and women students are the sixteen bowling lanes and the modern billiard room for recreation; the large cafeteria and interesting fountain grille for dining; the men's, women's, and coeducational lounges for resting and studying; the spacious open terrace for lounging or dining; the



Scene from University Theatre Production

University Post Office and the neighboring Union Bookstore, and barber and beauty shops for convenient utilitarian services.

The beautiful ballroom provides the background for the numerous informal dancing parties and dance instruction sessions that are a part of the summer recreational program. Upon occasion some of the dancing and social hour programs are conducted on the outdoor terrace.

**The Union Art-Craft Workshop**—The Coffman Memorial Union features informal recreational opportunities for developing new skills in the arts and crafts in the workshop where instruction and material are available. Tools and materials in oil and water color painting, ceramics, metal, leather, wood, and all other crafts are available without formal registration or fees.

**Union program**—The Union provides a diversified program of social, recreational, and cultural activities designed to appeal to summer students.

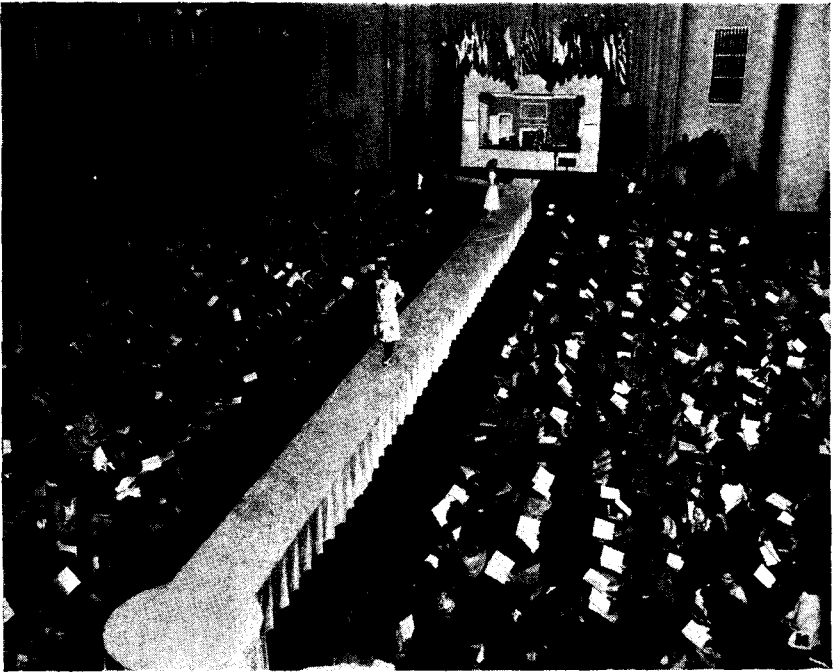
Dance instruction in folk and modern dancing; instruction classes and tournaments in bowling, billiards, and table tennis; social hours, parties, musical programs, and art exhibits are available to students without charge.

#### UNIVERSITY FARM UNION

The University Farm Union located in Old Dairy Hall will be open throughout the Summer Session for students on the Agricultural Campus. The facilities include a coeducational lounge, game room lounge, game room, photography dark room, fountain grille, and a kitchenette for use of social group gatherings.

#### THE MUSEUM OF NATURAL HISTORY

The Minnesota Museum of Natural History is the modern, ivy-covered limestone building located at 17th and University Avenues. Its exhibition corridors house a refreshing series of lifelike exhibits of the animal and plant life selected from the various corners of Minnesota. These are open to the public from 9 to 5 daily and from 2 to 5 on Saturdays, Sundays, and holidays during both summer terms. In addition to the public exhibits, extensive scientific series of birds, mammals, and other natural history materials are housed here for those interested in more careful study in these fields. The Museum's attractive auditorium is widely used by many different departments on the campus.



Style Show in the Union

## ADMISSION AND REGISTRATION

### ADMISSION

By action of the Board of Regents on December 13, 1946 admission to the 1947 Summer Session will be on the following basis. Except for persons registered in the Graduate School or for the degrees master of education, master of laws, or an equivalent advanced degree in any college, nonresident restrictions will apply. However, special Summer Session provisions are made for:

1. Residents of Wisconsin, northern Michigan, Iowa, North Dakota, South Dakota, and Montana.
2. Former students or sons or daughters of former students of the University of Minnesota.
3. Individual cases showing most unusual promise, if recommended by suitable academic authorities.

Those who in the light of this brief summary believe themselves eligible for admission should write to the Office of Admissions and Records, University of Minnesota, Minneapolis 14, Minnesota, stating all pertinent qualifications, and indicating a desire to attend the Summer Session. If eligible for consideration, applicants are subject to the following entrance privileges and requirements:

The courses of the Summer Session are open to all qualified high school graduates. *Students with previous college work who wish to attend only for the Summer Session, and are not candidates for degrees during this Summer Session, may do so without filing credentials provided they are in good standing. Such students will be classified as special students for the Summer Session only. Anyone who expects to become a candidate for a degree at the University during either summer term must, at the time of his registration, file with the Office of Admissions and Records of the University of Minnesota an application for admission and official transcripts of credits covering high school and previous college work. Students who have had no previous college work must satisfy regular admission requirements to attend Summer Session. For Summer Session purposes, persons of maturity (generally over twenty-four years of age) whose preparation does not meet the entrance requirements may attend as adult special students subject to the approval of the dean of the college or school concerned.*

The procedure for admission of Graduate students is discussed on pages 17 and 18.

Students should consult the General Information Bulletin for detailed information concerning admission to the various colleges. The General Information Bulletin and college bulletins describing curricula offered may be obtained by inquiry addressed to the Office of Admissions and Records, University of Minnesota, Minneapolis 14.

## NONRESIDENT REGULATIONS FOR THE ACADEMIC YEAR

By action of the Board of Regents, taken because of the present educational emergency, admission of nonresidents to the regular session is restricted, subject to the following exceptions: veterans whose homes are in a defined area economically and educationally related to Minnesota and who are in the upper 25 per cent of their high school graduating classes, or who have an average of "B" or better if they are applying for admission with advanced standing, may be considered. Nonveterans in the same area to be considered, must be in the upper 10 per cent of their graduating class or present a "B" average if applying for admission with advanced standing. Sons and daughters of former students are also eligible for consideration. Other minor exceptions have been established covering a few individual circumstances. It is under all of these rulings that each individual application is reviewed.

### REGISTRATION

In order that the short terms may prove of maximum value, and that the work of the courses may not be interfered with by late entrants, students are urged to complete their registration, including payment of fees, on the days set aside for registration.

The regular registration days are:

For the first term	Tuesday, June 17, 8:00 a.m. to 4:00 p.m.
For the second term	Monday, July 28, 8:00 a.m. to 4:00 p.m.

Late registration fees are charged for the first term as follows for registration or payment of fees on:

Wednesday, June 18 .....	\$2.00
Thursday, June 19 .....	3.00
Friday, June 20 .....	4.00
Monday, June 23 .....	5.00

No registrations are allowed for the first term after Monday, June 23, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

The late fees for the second term are as follows for registration or payment of fees on:

Tuesday, July 29 .....	\$2.00
Wednesday, July 30 .....	3.00
Thursday, July 31 .....	4.00
Friday, August 1 .....	5.00

No registrations will be accepted for the second term later than Friday, August 1, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

*No provision is made for allowing exemption from the late registration fees to those who are unable to reach the University during the regular registration days.*



The University of Minnesota reserves the right to cancel any and all courses in which the registration is insufficient to warrant continuation of the course.

At the beginning of the first term candidates for admission to all colleges except the College of Agriculture, Forestry, and Home Economics will register in the Field House at University Avenue and Oak Street Southeast. Candidates for admission to the College of Agriculture, Forestry, and Home Economics will register at 203d Administration Building, Agricultural Campus.

#### CHANGES IN REGISTRATION

After a student's registration has been accepted by the recorder, any change must be approved by the Students' Work Committee or the dean of the college in which the student is registered. Only in exceptional cases will any change be made after classes have begun.

#### FEEES

The following fees are payable each term by each full-time student at the time of registration and must be paid before registration is complete:

Tuition fee (per term) .....	\$25.80
Incidental fee‡ (per term) .....	6.00
.....	
Total fee (per term) .....	\$31.80
General deposit .....	\$ 2.00
Forestry fees:	
Dormitory and dining hall at Itasca Forest and Biological Station (first term) .....	\$ 5.00

The following fees are payable each term at the time of registration by each student taking four credits or less and must be paid before registration is complete:

Part-time tuition fee (4 credits or less) (per term) .....	\$15.80
Incidental fee‡ (per term) .....	6.00
.....	
Total fee (per term) .....	\$21.80
General deposit .....	\$ 2.00

NOTE—Regular quarter fees as provided during the academic year will be charged in Medicine, Dentistry, Dental Hygiene, Law, and Nursing. In all other colleges the regular Summer Session fees as listed above will be charged.

In addition, certain courses carry a fee as indicated in the description of those courses in the regular bulletin.

Graduate students who have completed all of their graduate work with the exception of their theses will be allowed to register in the Summer Session (one or both terms) for *thesis work only* upon the payment of \$5 tuition and \$2 deposit, per term.

‡ An incidental fee of \$6.00 per term is charged each student for which the student receives the privileges of the Coffman Memorial Union, the Health Service, Library, Counseling Bureau, Speech Clinic, Recreation, and the university post-office service.

Charges for lockers, laboratory breakage, library fines, etc., will be deducted from the \$2 deposit and the balance will be refunded by mail after the close of the term.

#### AUDITORS

Fees for auditors are the same as for students registered for credit. Permission to attend classes as auditors may be granted by the dean of the college or school with the consent of the department concerned. The procedure for registration as auditor is the same as for registration for credit, except that "auditor" should be indicated on the registration sheet. It is expected that auditors will be registered in at least one course for credit, but this regulation may be waived in exceptional cases.

#### CREDIT

Credit is administered on the following basis: one quarter credit usually requires not less than 10 lectures or recitation periods (2 per week for a summer term) requiring two hours of preparation each or not less than 20 periods of laboratory work requiring one-half hour of preparation each; or not less than 30 hours of laboratory work with no preparation. Courses carrying two or more units of credit require corresponding multiples of these amounts.

#### AMOUNT OF WORK

A maximum of 9 credits or two 5-credit courses is considered a full program for either term. Registration for a greater number requires special permission from the Students' Work Committee or the dean of the school or college in which the student is registered.

Examinations are held at the last scheduled class hour for each course.

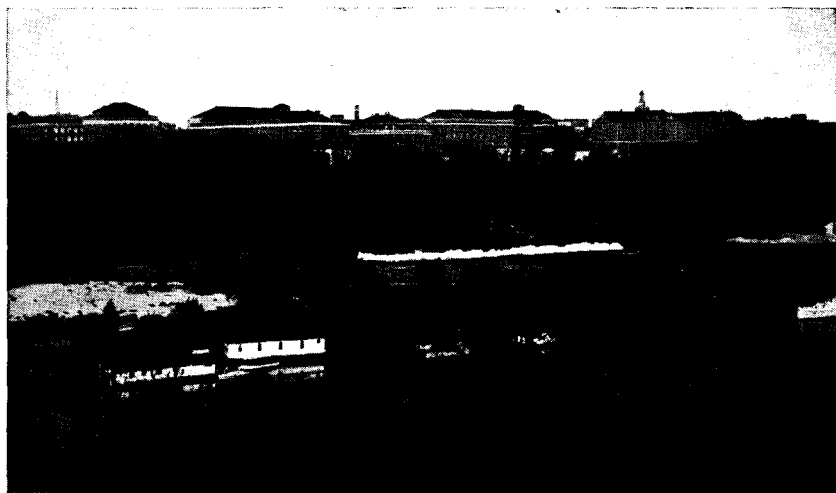
## GRADUATE SCHOOL

The Graduate School of the University of Minnesota presents unusual opportunities for advanced study and research in many fields. The University's libraries, laboratories, and clinics supplemented by the libraries, hospitals, and other institutions in the Twin Cities, offer excellent facilities and possibilities for graduate students.

The Graduate School brings together in a single organization all the programs and offerings of the University at the level of advanced instruction that may lead to the higher degrees of master of arts, master of science, and doctor of philosophy.

The privileges of this school are in general open to those who have received Bachelor's degrees from accredited colleges and universities and are adequately prepared for graduate work in their chosen fields of study.

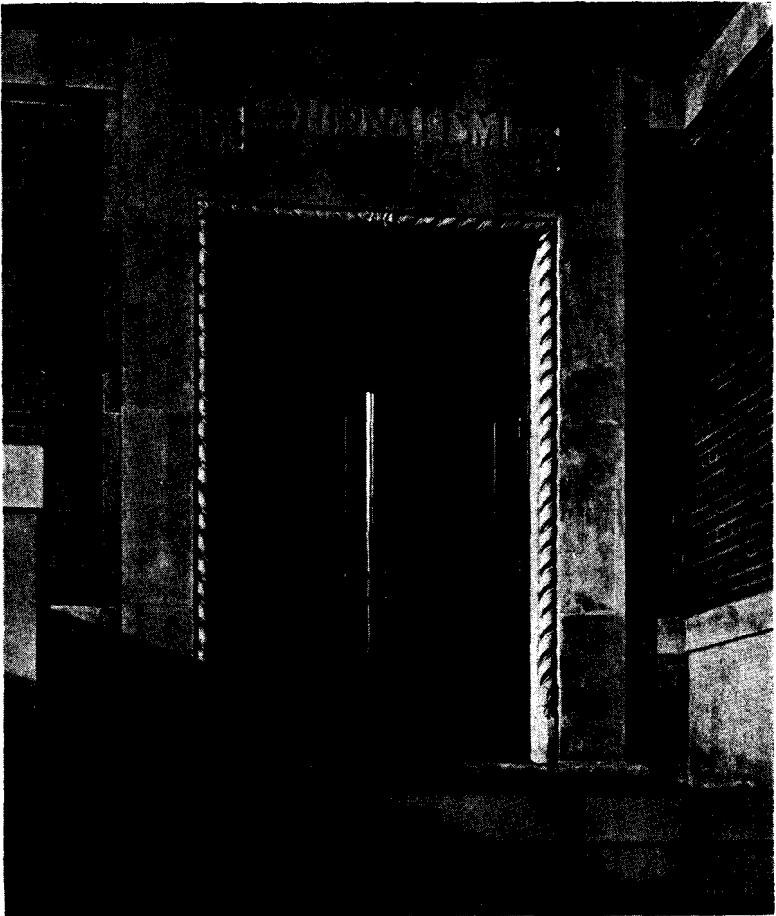
Students not yet admitted to the Graduate School are requested to make application for admission at least four weeks before the opening of the term that they expect to attend, in order to avoid delay, last-minute disappointment, and possible penalty for late registration. All applications for admission, except for graduates of the University of Minnesota, must be accompanied by an *official transcript* in duplicate of all undergraduate work, including degrees earned, and by a single official transcript of all graduate work completed. Graduates of the University of Minnesota are expected to offer certified copies of their scholastic records. In certain departments, such as those conducting clinical or laboratory work, it will



River Flats

be necessary for students to check individually with the head of the department concerned as well as with the Graduate School office before their application for admission may be approved. In any case, admission to the Graduate School does not necessarily imply admission to a given major department, and students, therefore, before their arrival at the University, should secure assurance from the Graduate School that they are adequately prepared and will be accepted as majors in their chosen field.

A more detailed statement of the requirements and work in the Graduate School will be found in the Bulletin of the Graduate School, copies of which may be obtained by writing to the Dean of Admissions and Records, University of Minnesota, Minneapolis 14, Minnesota.



Murphy Hall

## COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

The College of Science, Literature, and the Arts offers a wide range of selection to the Summer Session student. Courses have been selected from the regular curriculum with especial attention to the needs and interests of college and preprofessional students.

The course of study in the College of Science, Literature, and the Arts leads to the degree of bachelor of arts or bachelor of science.

For general information regarding requirements for admission as regular or adult special students, for general rules and regulations, and for the requirements for degrees in the different curricula offered by the college, students should consult one of the administrative officers or the complete Bulletin of the College of Science, Literature, and the Arts, copies of which may be obtained by writing to the Dean of Admissions and Records, University of Minnesota, Minneapolis 14, Minnesota.

### DEPARTMENT OF MUSIC

A special feature of the Department of Music is a course in Gregorian Chant to be taught by a nationally-known authority on the subject, the Reverend Dominic Keller, OSB. The Department of Music hopes to organize a Summer Session chorus and present a choral program under the direction of a noted choral director.

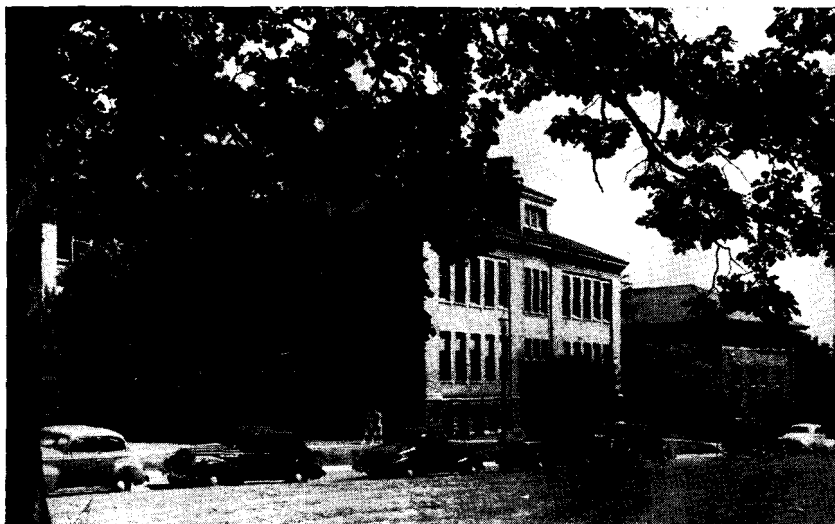
Regular courses in applied music including all orchestral and band instruments together with those in theoretical subjects on the undergraduate and graduate levels will be offered for music and music education majors.

A special workshop in elementary music will be offered in the music education field together with music methods courses, applied instrumental technique, choral and band conducting, and psychological foundations of music education. Nationally-known professors in music will be on the music and music education staffs.

### INSTITUTE OF TECHNOLOGY

The Institute of Technology embraces the College of Engineering and Architecture, the School of Chemistry, and the School of Mines and Metallurgy. For the Summer Session student interested in these fields, the resources of its laboratories, and the services of some of its ablest faculty members will be available.

Included in the curriculum of the College of Engineering and Architecture will be courses in architecture, freehand drawing, painting and modeling, aeronautical, civil, electrical and mechanical engineering, drawing and descriptive geometry, geology, mathematics and mechanics. In the School of Chemistry, inorganic chemistry, analytical chemistry, organic chemistry, physical chemistry, and chemical engineering will be offered again this summer. Sufficient graduate courses in chemistry are now offered in the



Buildings on Agricultural Campus

Summer Session so that students may acquire a Master's degree in this field by attending in the summer only. Students entering the Institute of Technology with a deficiency in higher algebra (Mathematics and Mechanics 9) or solid geometry (Drawing 10) have an opportunity to remove this deficiency during the Summer Session preceding their entrance into the University in the fall.

### COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

The College of Agriculture, Forestry, and Home Economics offers a limited number of courses to college undergraduates interested in these fields. It offers a larger number of courses from most of the agricultural divisions for graduate students. For high school teachers of agriculture there are opportunities for advanced courses in many of the agricultural fields which are supplementary to the courses offered by the Department of Agricultural Education (see College of Education, page 59). For courses offered at the Biological Station at Lake Itasca see page 21.

The courses offered by the Home Economics Division are designed primarily for advanced undergraduate students and qualified graduate students. The courses listed represent the fields of foods and nutrition, related art, home management, textiles and clothing, and home economics education.

**Graduate study**—Opportunity is offered in the divisions of Agriculture and Forestry for graduate study either for the first six-week term of the Summer Session or for the entire session of eleven weeks.

In some divisions both course and thesis work may be carried for the entire eleven weeks. In other divisions thesis or course work may be pursued only through the first term. Information concerning graduate work during the summer in any division should be obtained from the head of the division. Thesis and problem work are correlated in most divisions with the work in the Experiment Station, and the facilities offered during the summer are in most divisions especially attractive because of the field work possible only at that time. In Home Economics, graduate course work is given in the first term only. Home Economics students are able to take courses in certain related fields in other departments.

### **BIOLOGICAL STATION OF THE UNIVERSITY OF MINNESOTA**

The Biological Station at Itasca Park will offer an extensive curriculum in the several fields of biology during the second term of the Summer Session which begins on July 29, 1947. This attractive station is well equipped with the necessary laboratories for instruction and adequate living accommodations for students. The courses offered conform to the usual university standards at both the undergraduate and graduate levels. There are unusual opportunities for independent graduate work. Students desiring graduate credit must consult the Graduate School as to admission and registration.

Courses in botany, wildlife, vertebrate zoology, entomology, mycology, parasitology, and limnology will be offered. The enrolment is limited to one hundred students. More detailed information will be furnished in a special bulletin which will be issued in the winter quarter. All inquiries concerning the Biological Station should be addressed to the chairman, Biological Station Committee, College Office, University Farm, St. Paul 1, Minnesota. Application for registration should be filed with that office not later than July 15, 1947. Early registration is recommended.

### **MEDICAL SCHOOL**

The University of Minnesota Medical School is known as one of the leading centers for medical instruction and training in the United States. Its affiliation with the Mayo Foundation and its location in the Twin Cities, one of the principal medical centers of the Northwest, provide the University of Minnesota Medical School with unusual opportunities for the Summer Session student.

The Summer Session in the Medical School begins on June 30 and ends on September 12. The two terms of the Summer Session make up a regular quarter of instruction in the Medical School with required attendance of all medical students. Where facilities permit, special Summer Session students may be admitted to certain of the classes in the Medical School. Undergraduate students should make arrangements through individual departments. Students who wish

to earn graduate credit must register through the Graduate School. Final approval must be obtained from the Medical School.

Training programs for the following groups of professional health workers are offered under the Medical School: physicians, nurses, physical therapists, occupational therapists, medical and X-ray technologists, medical officers of health, public health nurses, and public health engineers. Courses in all of these fields are offered during the Summer Session. For more detailed information regarding courses, fees, etc., consult the regular Bulletin of the Summer Session.

#### SCHOOL OF NURSING

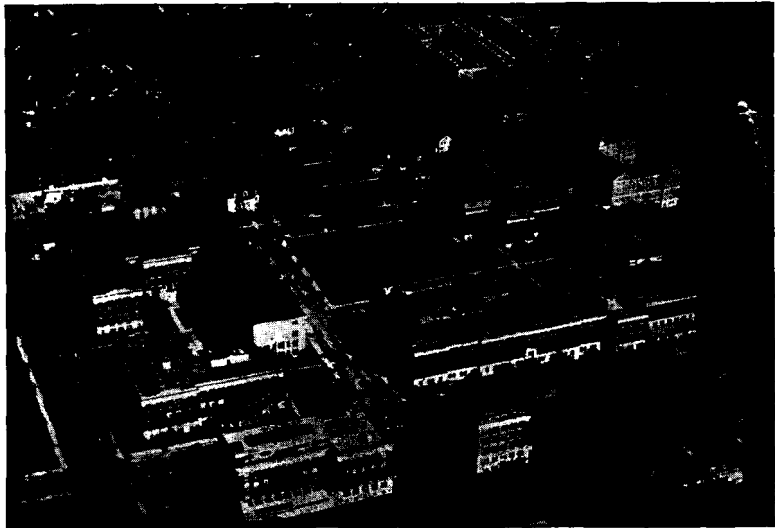
The School of Nursing offers undergraduate courses leading to the degrees of bachelor of science and graduate in nursing. During the Summer Session it will also offer courses in ward administration, personnel work, principles of learning and methods of teaching, and fundamentals of nursing service administration.

Students planning to enroll in the certificate courses in advanced clinical nursing in the fall quarter may complete the psychology and sociology prerequisites during the Summer Session.

Students who have completed three quarters of an advanced clinical program may register for a full quarter of clinical field practice.

#### SCHOOL OF PUBLIC HEALTH

During the 1947 Summer Session the School of Public Health will offer a broad program of study for professional personnel at both the undergraduate and graduate levels extending through both terms of the Summer Session.



Air View of Medical Group, Minneapolis Campus



Courses will be available for public health engineers, public health nurses, health educators or other personnel who are studying toward a special professional degree in public health work. Public health nurses engaged in or preparing for supervisory work, as well as those who are seeking introduction to the field, will find courses to meet their needs. The basic courses for public health nurses again will be divided between the two summer terms.

Courses in personal and community health and in school health will be available for students seeking to meet the health requirement of the College of Education.

Two workshops in public health nursing are planned. During the first term a workshop is planned for nurses who are receiving public health nursing students for field training. The workshop during the second term will be directed toward the needs of supervisors who have special interests in mental hygiene. Registration for both workshops will be limited.

#### **MEDICAL TECHNOLOGY AND X-RAY TECHNOLOGY**

The required four-year curricula in medical technology and X-ray technology or the combined course in medical technology and X-ray technology lead to the degree of bachelor of science.

Several of the required courses in these curricula are given during the Summer Session. (See special bulletin on Medical Technology and X-ray Technology.) Before registering in Summer Session, students should consult advisers in the Medical Technology Office, M-519, University Hospitals.

#### **PHYSICAL THERAPY**

The four-year course in physical therapy leads to the degree of bachelor of science. Several of the required courses are offered during the Summer Session. (See special Physical Therapy Bulletin for list of required courses.) All students who wish to enroll in Physical Therapy should first consult adviser in Room W-300, University Hospitals.

#### **OCCUPATIONAL THERAPY**

The course in occupational therapy is a four-year and one-quarter course 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 prescribed curriculum. For further information write to the Occupational Therapy Office, 3302 Powell Hall, University of Minnesota, Minneapolis 14, or telephone MAin 8551, extension 347.

#### **SCHOOL OF DENTISTRY**

The School of Dentistry will offer clinical instruction in operative dentistry, prosthesis, crown and bridge, periodontia, oral surgery, pedodontia, and oral diagnosis. Those dental students who are eligible may take advantage of this instruction.

## COLLEGE OF PHARMACY

Students in the College of Pharmacy will register for one or both terms of the Summer Session in those subjects that are non-professional (pharmaceutic) courses. A student registering as a freshman at the beginning of the winter quarter will complete zoology, qualitative analysis, and English composition during both terms. Upper classmen may register for offerings made in any other college. No courses in pharmacy, pharmaceutical chemistry, or pharmacognosy will be offered during the Summer Session of 1947.

## COLLEGE OF EDUCATION

The 1947 Summer Session program for the College of Education will include offerings by outstanding visiting lecturers in administration, philosophy of education, curriculum, and other fields. In addition a strong graduate and undergraduate program will be offered by the regular staff who will be in residence for work with graduate students on research problems, as well as for class instruction.

For the study of current problems in American education, several special workshops have been tentatively planned for the 1947 terms. These include two workshops in the first summer term, emphasizing the problems of curriculum adjustment and instruction, and the annually offered workshop in higher education and teacher education problems. In the second term, a workshop in home economics education has been scheduled. The rural education workshop, also scheduled for the second term, will be open to rural teachers for the study of their own problems. In the field of music education, a special workshop in the first term will be offered. Anyone interested



Burton Hall

in applying for admission to a workshop should address the Office of the Dean, College of Education, University of Minnesota, Minneapolis 14.

The regular undergraduate program of the College of Education will be in operation during the summer term so that teachers in service completing degree requirements, as well as returned veterans who wish to attend through the summer, may find the courses they need. As part of this program, the offerings of the second term have been strengthened through the expansion of work in Art Education, Physical Education, Industrial Education, and other fields.

An extensive program of graduate work in education will be offered during the summer, as well as the special programs for the master of education degree administered by the College of Education. Graduate students planning to work toward the M.A. and Ph.D. degrees with a major in education should follow the procedure outlined by the Graduate School for admission and program planning.

Present and prospective education workers reading this preliminary announcement are urgently requested to send in to the College of Education any questions they may have about the 1947 Summer Session offerings or suggestions of ways in which we may better serve the needs of the schools. Other plans for courses and workshops not yet definitely determined may be included in the final announcement to be issued later in the year.

## **PHYSICAL EDUCATION FOR MEN**

### **PROFESSIONAL PROGRAM FOR TEACHERS**

A full program of professional courses will be offered for students working toward the following:

1. Bachelor of science degree with a major in physical education or in recreation.
2. Bachelor of science degree with a minor in physical education or in recreation.
3. Endorsement for teaching physical education part time (9 quarter hours required by the Minnesota State Department of Education).
4. Master of education degree with a major in physical education or in recreation.

See the Program of Courses, page 66, for specific course offerings.

For further information write the Department of Physical Education and Athletics, University of Minnesota, Minneapolis 14.

## **PHYSICAL EDUCATION FOR WOMEN**

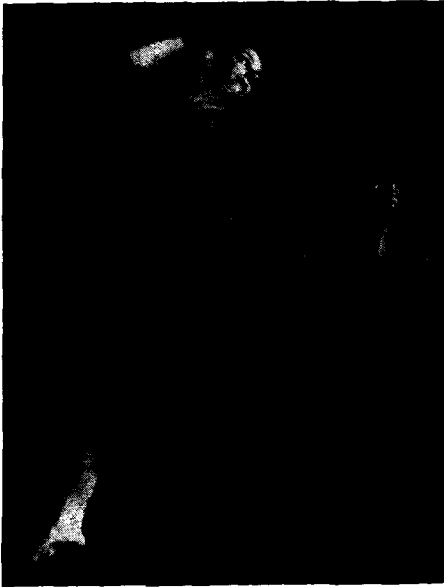
### **INSTITUTE ON "LEADERSHIP PROBLEMS IN GIRLS' CAMPS"**

The Department of Physical Education for Women announces a two-day institute on the outstanding problems of directors and counselors in girls' camps at the present time. The institute will be held at the end of the first week of Summer Session, Friday and Saturday,

June 20 and 21, Norris Gymnasium for Women. Particular stress will be placed upon modern camp activities, standards of operation and health, as well as other crucial problems encountered in the conduct of a good modern camp today. Experts on various timely subjects will be drawn from leaders in the field of camping.

#### PROFESSIONAL PROGRAMS FOR TEACHERS

1. **The master of education program**—A five-year curriculum or 45 credits in courses numbered over 100 in addition to the equivalent of a four-year major. The program for the master of education degree is set up for each individual in terms of background and



Modern Dance

professional interests. See especially courses 112, 113, 114, and courses numbered over 100 in the Department of Physical Education for Men.

2. **The four-year major in physical education**—A number of courses required in the undergraduate major leading to the bachelor of science in education are available this summer. See courses 4, 21, 41, 61, 73, 83, 84.

3. **The undergraduate minor in physical education**—Several courses required in the undergraduate minor are available this summer. Those who have met the requirements for the nine-quarter-hour endorsement have

thereby met 9 of the 26 credits required for the minor in this field. See especially courses 4, 8, 21, 32, 33, 37, 41, 61, 73, 84, 90.

4. **The nine-quarter-hour endorsement**—Required by the State Department of Education for those who wish to teach physical education part time in Minnesota. It is possible to meet this endorsement entirely in the first term. See especially courses 4, 10, 21, 37, 41, 61, 73, 84.

5. **Minor in school health education**—Several courses required for this minor are available this summer. See courses 83, 90, 114.

#### COLLEGE PHYSICAL EDUCATION REQUIREMENT

Opportunity is given for choice among several courses to satisfy the physical education requirement in any of the university colleges.

Questions concerning any of the above offerings should be ad-

dressed to the Department of Physical Education for Women, University of Minnesota, Minneapolis 14, Minnesota.

#### **TEACHING DEMONSTRATIONS**

The department presents a regular program of teaching demonstrations in physical education throughout the first term of the Summer Session at the University Demonstration School.

#### **SCHOOL OF BUSINESS ADMINISTRATION**

The School of Business Administration offers a broad foundation in the several management functions in a business organization, together with specialized courses which develop the individual's special interest or objective. The location of the University in the leading metropolitan area of the Northwest presents opportunities for close and convenient observation of business in action.

Admission to the School of Business Administration follows completion of a two-year pre-business course in the College of Science, Literature, and the Arts, the College of Agriculture, Forestry, and Home Economics, or the Institute of Technology. Special provision has been made for veterans of World War II for modifying the requirements for admission where it is in the best interests of the student. For details of the requirements and their modification, the prospective student is invited to consult the Bulletin of the School of Business Administration, or write to the dean.

High school graduates who have reached the age of twenty-four and can furnish evidence to the effect that they have had business experience in an executive capacity may be admitted as special students. World War veterans aged twenty-one or over, with special objectives in business, may also be admitted as special students.

Work at the graduate level in Business Administration and Economics should be arranged through the Graduate School.

#### **INSTITUTE OF CHILD WELFARE**

There is a continuing need for trained people in the fields of child development, early childhood education, and parent education. The summer courses offered by the Institute of Child Welfare are designed both to prepare workers in these fields and to refresh the training of those with previous experience.

In addition to the regular program of courses for undergraduate and graduate students, two workshops in Childhood Education and Child Development will also be offered in the first term. The Nursery School and Kindergarten will be in operation during the first term in order to provide observation and directed teaching facilities.

#### **WORKSHOPS IN CHILDHOOD EDUCATION AND CHILD DEVELOPMENT**

Two workshops carrying nine credits each will be offered in the first term of the 1947 Summer Session. The first one, Ed.T. 78 will be open to teachers without a degree, and the second, C.W. 186



Children in the Nursery School

(Ed.C.I. 131) to those who already have a Bachelor's degree. In each workshop the students will be required to attend one lecture course for the equivalent of three credits. For the remaining six credits the students will be divided into special interest groups, but also will work as a whole. Opportunities for independent study, conferences, observations, and group work under supervision will be provided.

Library facilities and workrooms in Pattee Hall and observational facilities in the Nursery School and Kindergarten of the Institute of Child Welfare, and in local settlement houses, child care centers, and the Tuttle Elementary Demonstration School, will be available.

The workshops, which will be very practical, will present up-to-the-minute material of value both to the working teacher and to the teacher who has been out of the field for some time.

### **LIBRARY INSTRUCTION**

The Division of Library Instruction offers a series of integrated eight-week terms, which will allow a student to complete the full library course in four summers. During the eight-week session basic courses for beginners and advanced courses for students who have already partially completed the program will be offered jointly. The same procedure will be followed in succeeding summers.

Students training for librarianship as a career will find it possible to take:

1. Courses enabling them to take positions as teacher-librarians (i.e., part-time teaching, part-time library work) in schools.
2. Courses leading to the degree of bachelor of science (B.S.) or of bachelor of science in library science (B.S. in L.S.), and preparing them for full-time library positions in school, public, college, and university libraries.

Juniors, seniors, or postgraduate students may enroll for courses in the Division of Library Instruction, either in the College of Science, Literature, and the Arts, in the University College, or in the College of Education, and should meet the admission requirements for the respective college in which they enroll. Under certain conditions, students not meeting the admission requirements may enroll as special students, upon the recommendation of the Director of the Division of Library Instruction.

Forty-five quarter credits constitute a major in the Division of Library Instruction, all of which must be taken in residence. A student becomes eligible for either a bachelor of science degree or a degree of bachelor of science in library science at the completion of these forty-five credits, under the conditions set forth in the Announcement for the Years 1945-47 of the Division of Library Instruction, published July 10, 1945.

### THE GENERAL COLLEGE

The General College offers a two-year program in higher education leading to the degree of associate in arts. Admission to the college requires graduation from an accredited high school or the passing of university entrance tests, but no specific pattern of high school subjects is required. Students who because of inadequate preparation or poor high school record do not qualify for admission to other colleges of the University, may remedy these deficiencies or demonstrate their ability to handle work of college calibre through a careful selection of courses in the General College.

For general information about the college program, requirements for transfer to other colleges, requirements for the associate in arts degree, and general regulations, students should consult one of the administrative or counseling officials or the complete bulletin of the General College. Courses successfully completed in the Summer Session may be applied toward fulfilling the requirements of comprehensive areas and examinations described in detail in the college bulletin.

### CENTER FOR CONTINUATION STUDY

The Continuation Center is a small residence college conveniently situated on the Main Campus and devoted to short special courses for selected groups. Most of its offerings are in postgraduate

and professional subjects. Many of its courses are of interest to Summer Session students, and often the latter find it possible to attend one or more such courses before, after, or during the summer terms. The schedule of the Center is flexible, and courses are arranged to meet, as they arise, specific needs in many fields such as medicine, dentistry, public health, education, law, engineering, business, government, and social welfare. Summer Session students will do well to find out what the Center will offer while they are on campus. Inquiry should be made of the Head, Center for Continuation Study, University of Minnesota, Minneapolis 14.

### CREATIVE ARTS

Development in the creative arts, emphasized during the past few years at the University of Minnesota, will be continued in the 1947 Summer Session. An American painter will be available for courses in oil and water color painting and for individual criticism and advice to advanced students. Extended offerings under the Art Education Department will include studio practice in handcrafts, metal work, ceramics, and wood sculpture. In addition, the contribution and place of art in our society will be studied in such courses as Scandinavian Art Movements of the Twentieth Century and Home Design in Society and Education. The usual basic design and painting courses for elementary and secondary school teachers will be offered this summer, as well as advanced discussions of the problems of art in the schools.

Regular courses in architectural design, freehand drawing, painting, and modeling are available in the School of Architecture.

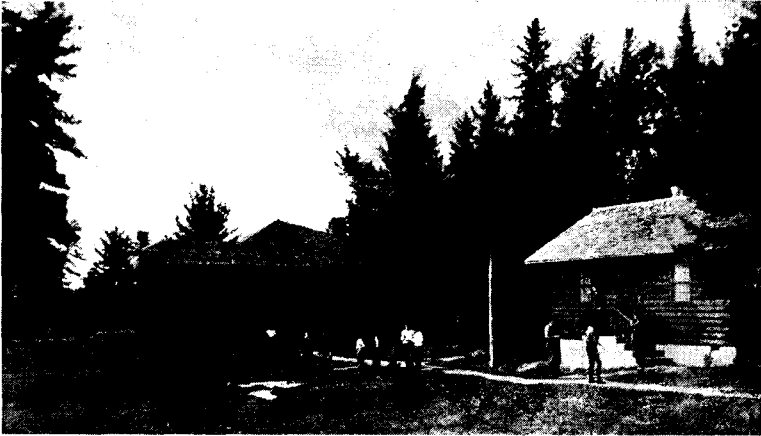
Practical skill in drawing and representation, particularly in technical and scientific work, may be developed in a number of courses offered by the Department of Drawing and Descriptive Geometry.

In the Division of Home Economics, courses in related art are planned to integrate art with home economics training, and to develop discriminating taste in connection with the home and family life.

Introductory courses in art appreciation and the history of art are given by the Department of Fine Arts. These aim to provide a general cultural and historical background for both professional students and teachers of art as well as those interested primarily in history and the humanities. Specialized studies in American art and French and English painting are available to students of more advanced standing.

Special curricula for professional training in the arts are laid out in the College of Science, Literature, and the Arts through the Department of Fine Arts. These programs include preliminary work in occupational therapy offered in conjunction with the Medical





Itasca Biological Station

School, a four-year course in commercial art, professional studio work, as well as graduate work in historical and creative research. Further information on these curricula may be had by writing directly to the Director of the Summer Session or to the Department of Fine Arts, University of Minnesota, Minneapolis 14, Minnesota.

#### THE UNIVERSITY GALLERY

The University Gallery offers a number of important exhibits during the Summer Session, and its extensive reference and pictorial material will be available for individual and class use.

#### A TRAINING PROGRAM IN VOCATIONAL DIAGNOSIS AND COUNSELING

A Master's degree, under either Plan A or Plan B, may be taken by students who desire training in vocational diagnosis and counseling, with a major in psychology or educational psychology. Training in these departments may be combined with related courses in other departments, e.g., personnel work or industrial relations in the School of Business Administration or in Public Administration, case work in the School of Social Work, etc.

The need for counselors is great, due to war casualties, industrial misplacement of workers, and other causes. Industry faces the problem of absorbing and rehabilitating returned veterans. The Veterans' Administration needs many counselors in their work. Every hospital which deals with patients who cannot return to their regular jobs should have a vocational counselor. Every community of any size has citizens who for one reason or another need vocational counseling and such a program should more than pay its way in the savings in relief benefits that will accrue from real vo-

cational guidance work. It is apparent that no one course of training is going to prepare adequately a counselor to meet the many types of counseling jobs that are open. Therefore, the Counseling Program at the University of Minnesota has been set up with "flexibility" as the keynote of the curriculum. The plan is to "tailor make" the course of study for each student who enters this program. By so doing, each student will be trained for the particular type of counseling work he plans to enter. If he intends to enter industry, one program will be prepared; if it is a municipal project he is entering, a different program of courses will be worked out; and so on for the various types of counseling jobs. This being true, no specific course of study has been prepared. The particular course of study a student follows will be worked out by the student and his adviser, with the student's needs and future plans being the point of reference. D. G. Paterson, John G. Darley, or H. P. Longstaff (Psychology), Walter W. Cook, or C. Gilbert Wrenn (Education), among others, are advisers in their respective departments for candidates preparing for positions in Vocational Diagnosis and Counseling.



Campus Scene

## Program

The following list of courses will be revised and amplified in the complete Bulletin to meet the changing trend in enrolment. Further, the University of Minnesota reserves the right to cancel courses when competent teaching staff is found to be unavailable.

### EXPLANATION OF COURSE NUMBERS

Courses 1 to 49 carry credit in the Junior College.  
 Courses 50 to 99 carry credit in the Senior College.  
 Courses 100 to 199 carry Senior College credit and graduate credit for those registered in the Graduate School.  
 Courses 200 and above are open only to those registered in the Graduate School.

## COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

### ANTHROPOLOGY

#### FIRST TERM

12Csu	General Anthropology (General College) .....	Ar.
40su	Introduction to Anthropology .....	Mr. Watson
122su	Problems in Anthropology .....	Mr. Watson
129su	Primitive Economics .....	Mr. Watson

#### SECOND TERM

41su	Introduction to Anthropology .....	Mr. Wallis
119su	The Contact of Cultures .....	Mr. Wallis
123su	Problems in Anthropology .....	Mr. Wallis

#### SUMMER QUARTER

140su	Field Trip in Archeology .....	Mr. Wilford
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### ASTRONOMY

#### FIRST TERM

11su	Descriptive Astronomy .....	Mr. Luyten
13su	Stellar and Practical Astronomy .....	Mr. Luyten

#### SECOND TERM

13su	Stellar and Practical Astronomy .....	Mr. Luyten
20su	Astronomy for Navigation .....	Mr. Luyten

### BOTANY

#### FIRST TERM

4su	General Botany .....	Mr. Palmquist
197su	Problems .....	Ar.

#### SECOND TERM

5su	General Botany .....	Mr. Palmquist
198su	Problems .....	Ar.

### CLASSICS

#### FIRST TERM

42su	Greek Mythology .....	Mr. Heller
141su	Problems in the Teaching of High School Latin .....	Ar.
171su	Independent Reading Courses (in Latin and Greek) .....	Mr. Heller

### COMMUNICATIONS

See General Studies, page 35.

## ECONOMICS

For courses in Economics, see School of Business Administration offerings listed on page 68.

### ENGLISH

#### FIRST TERM

##### *Courses in Literature*

21su	Introduction to Literature .....	Mr. Hessler
37su	Twentieth-Century Literature .....	Mr. Cronin
55su	Shakespeare .....	Mr. Buckley
56su	Shakespeare .....	Miss Christie
62su	Milton .....	Ar.
73su	American Literature .....	Mr. Brown
75su	Chaucer .....	Mr. Dunn
100su	Old English .....	Mr. Clark
105su	Proseminar in Eighteenth-Century Literature .....	Mr. Wellek
109su	Wordsworth and Coleridge .....	Mr. Wellek
114su	The Midwest in Literature .....	Mr. Hornberger
127su	Nineteenth-Century Drama .....	Mr. Hillhouse
132su	The Technique of the Twentieth-Century American Novel .....	Mr. Beach
153su	Seventeenth-Century Lyrists .....	Mr. Dunn
154su	The American Novel Prior to the Civil War .....	Mr. Brown
161su	Scientific Thought in American Literature .....	Mr. Hornberger
165su	The Historical Study of Modern English .....	Mr. Allen
174su	American English .....	Mr. Allen
254su	Seminar: Studies in Emerson .....	Ar.

##### *Courses in Composition*

4su	Freshman Composition .....	Ar.
5su	Freshman Composition .....	Ar.
6su	Freshman Composition .....	Ar.
27su	Advanced Writing .....	Ar.
28su	Advanced Writing .....	Ar.
101su	Seminar in Writing .....	Ar.

#### SECOND TERM

##### *Courses in Literature*

38su	Twentieth-Century Literature .....	Mr. O'Connor
55su	Shakespeare .....	Mr. Stallman
56su	Shakespeare .....	Mr. Hulme
74su	American Literature .....	Ar.
113su	The American Short Story .....	Miss Turpie
118su	Nineteenth-Century Prose .....	Ar.
150su	Victorian Poetry .....	Mr. Stallman
155su	The American Novel .....	Ar.

##### *Courses in Composition*

4su	Freshman Composition .....	Ar.
5su	Freshman Composition .....	Ar.
6su	Freshman Composition .....	Ar.
27su	Advanced Writing .....	Ar.
28su	Advanced Writing .....	Ar.
102su	Seminar in Writing .....	Mrs. Phelan

### ENGLISH FOR THE INSTITUTE OF TECHNOLOGY

#### SUMMER QUARTER

4su	Written and Spoken Communication .....	Mr. Guthrie and others
5su	Written and Spoken Communication .....	Ar.
6su	Written and Spoken Communication .....	Ar.
6Asu	Written and Spoken Communication .....	Ar.
3/su	Technical Discussions .....	Ar.

## FAMILY LIFE

See General Studies, below.

### FINE ARTS

#### FIRST TERM

1su	Introduction to Modern Art .....	Ar.
109su	American Art .....	Ar.
121su	French Painting of the Nineteenth and Twentieth Centuries .....	Ar.
122su	English Painting .....	Ar.

#### SECOND TERM

2su	Ancient and Medieval Art .....	Ar.
156su	Renaissance Art in Northern Europe .....	Ar.

### GENERAL STUDIES

#### FIRST TERM

##### *Communication*

1su	Communication .....	Mr. Ames
2su	Communication .....	Mr. Bryan

##### *Family Life*

1su	Preparation for Marriage .....	Mrs. Roads, Mrs. Aldrich
14su	Nutrition and Food Management .....	Mrs. Tucker

##### *Humanities*

4su	Humanities in the Modern World .....	Mr. Castell and others
11su	The European Heritage .....	Mr. Clark
21su	Humanities in the United States .....	Ar.
131su	Humanities Proseminar .....	Mr. Castell

##### *Personal Orientation*

1su	How to Study .....	Miss Power
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##### *Social Science*

1su	Introduction to Social Science .....	Mr. Levi, Mr. Kampelman
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#### SECOND TERM

##### *Communication*

2su	Communication .....	Mr. Ames
3su	Communication .....	Mr. Bryan

##### *Family Life*

1su	Preparation for Marriage .....	Mrs. Aldrich
25su	Child Development and Adjustment .....	Mr. Harris

##### *Humanities*

4su	Humanities in the Modern World .....	Miss Shaw and others
22su	Humanities in the U. S. ....	Miss Turpie

##### *Personal Orientation*

1su	How to Study .....	Miss Power
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##### *Social Science*

1su	Introduction to Social Science .....	Mr. Sewrey
2su	Introduction to Social Science .....	Mr. Kyllonen

## GEOGRAPHY

### FIRST TERM

41su	Geography of Commercial Production .....	Mr. Burgy
53su	Historical Geography .....	Mr. Brown
101su	Geography of Europe .....	Mr. Dicken
102su	Trade Routes and Trade Centers .....	Mr. Dicken
110su	Geography of South America .....	Mr. Brown

### SECOND TERM

11su	Human Geography .....	Mr. Davis
71su	Geography of North America .....	Mr. Weaver
125su	Geography of the Polar Areas .....	Mr. Weaver

## GEOLOGY AND MINERALOGY

### FIRST TERM

1su	General Geology .....	Mr. Thiel
100su	Field Work (Northern Minnesota) .....	Mr. Gruner
150su	Field Geology (Black Hills) .....	Mr. Schwartz
170su	Geologic Problems .....	Mr. Thiel

### SECOND TERM

2su	Historical Geology .....	Mr. Swain
170su	Geologic Problems .....	Mr. Swain

## GERMAN

### FIRST TERM

1su	Beginning A .....	Miss Wangsness
2su	Beginning B .....	Mr. Ramras
3su	Beginning C .....	Mr. Pfeiffer
4su	Intermediate German .....	Mr. Prottengeier
125su	Luther and the German Language .....	Mr. Downs
163su	Thomas Mann .....	Mr. Pfeiffer

### SECOND TERM

2su	Beginning B .....	Mr. Ramras
3su	Beginning C .....	Mr. Holske
4su	Intermediate German .....	Mr. Genschmer
259su	Direction of Graduate Work .....	Ar.

## HISTORY

### FIRST TERM

1su	Civilization of the Modern World. Part I of Freshman Survey .....	Mr. Athern
3su	Civilization of the Modern World. Part III of Freshman Survey .....	Mr. Peterson
4su	English History: Conquest and Settlement, The Feudal Age, Foreshadowings of Limited Monarchy and Popular Government .....	Mr. Morton
20su	American History to 1844. Part I of Sophomore Survey .....	Mr. Reynolds
22su	American History, 1878 to Present. Part III of Sophomore Survey .....	Mr. Sharp
53asu	Renaissance and Reformation: The Age of Dante and Petrarch .....	Miss Thompson
58asu	Russia (see special announcement) .....	Ar.
60su	Continental Europe: Napoleon III, the First "Modern" Dictator; Making the Kingdom of Italy and the Second German Reich .....	Mr. Anderson
65su	Europe in the Twentieth Century .....	Mr. Peterson
72su	English Constitutional History: in the Last Two Centuries .....	Miss Thompson
73su	Modern England .....	Mr. Morton

83asu	American Agricultural History. (History of American agriculture with reference to European backgrounds) .....	Mr. Edwards
86su	American Colonies: in the Seventeenth Century .....	Mrs. Tyler
86asu	Social and Intellectual History of the U. S. ....	Mrs. Tyler
90su	The American West: the Colonial Frontier .....	Mr. Osgood
104asu	Medieval European History (for students seeking graduate credit in History 53asu) .....	Miss Thompson
107su	Twentieth Century Europe (for students seeking graduate credit in History 65su) .....	Mr. Peterson
108su	Continental Europe (for students seeking graduate credit in History 60su) .....	Mr. Anderson
109su	Russian History (for students seeking graduate credit in History 58asu) .....	Ar.
116asu	American Agricultural History (for students seeking graduate credit for Hist. 83asu) .....	Ar.
156su	Selected Readings in European History: Seventeenth Century France .....	Mr. Steefel
183asu	Topics in American Agricultural History .....	Mr. Edwards
190su	Selected Readings in History of the West, Colonial Period .....	Mr. Osgood

#### SECOND TERM

2su	Civilization of the Modern World. Part II of Freshman Survey .....	Ar.
21su	American History: 1844-1877 .....	Mr. Saloutus
55su	Medieval European History, Part III .....	Mr. Krey
55asu	Renaissance and Reformation, Part II .....	Mr. Krey
58su	Early Modern European History: French Revolution and Napoleonic Empire .....	Mr. Steefel
58asu	Russian History (see special announcement) .....	Ar.
67su	Europe in the Twentieth Century, Part III .....	Mr. Deutsch
68su	American History: America since 1900 .....	Mr. Saloutus
70su	English Constitutional History: the Medieval Period .....	Ar.
93asu	Latin-American History, Part I .....	Mr. Beatty
94su	American Diplomatic History, Part II .....	Mr. Beatty
106su	Medieval European History (for students seeking graduate credit in Hist. 55su) .....	Ar.
106asu	Renaissance and Reformation (for students seeking graduate credit in Hist. 55asu) .....	Ar.
109su	Twentieth Century Europe (for students seeking graduate credit in Hist. 67su) .....	Ar.
109su	Continental Europe (for students seeking graduate credit in Hist. 58su) .....	Ar.
111su	Russian History (for students seeking graduate credit in Hist 58asu) .....	Ar.
127su	American Diplomatic History (for students seeking graduate credit in Hist. 94su) .....	Ar.
136su	Latin-American History (for students seeking graduate credit in Hist. 93asu) .....	Ar.
143su	American Folk Lore .....	Mr. Dorson
224su	Seminar in Modern European History .....	Mr. Deutsch

#### HOW TO STUDY

See General Studies, Personal Orientation, page 35.

#### HUMANITIES

See General Studies, page 35.

#### JAPANESE

See Linguistics and Comparative Philology, page 38.

**JOURNALISM**  
**FIRST TERM**

13su	Introduction to Reporting	
	Sec. 1 .....	Mr. Jensen
	Sec. 2 .....	Mr. Hage
	Sec. 3 .....	Mr. Janson
	Sec. 4 .....	Ar.
13su	Introduction to Reporting (for minors)	
	Sec. 1 .....	Mr. Haapa
	Sec. 2 .....	Ar.
15su	Newspaper Reporting	
	Sec. 1 .....	Ar.
	Sec. 2 .....	Ar.
51su	News Editing	
	Lectures .....	Mr. Emery
	Sec. 1 .....	Mr. Janson
	Sec. 2 .....	Mr. Janson
	Sec. 3 .....	Mr. Emery
	Sec. 4 .....	Mr. Janson
55su	Advertising and Newspaper Typography	
	Lectures .....	Mr. Wilson
	Sec. 1 .....	Mr. Wilson
	Sec. 2 .....	Mr. Wilson
	Sec. 3 .....	Mr. Wilson
	Sec. 4 .....	Mr. Wilson
67su	Radio News Writing	
	Lectures .....	Mr. Jensen
	Laboratories .....	Mr. Jensen
73su	Magazine Writing and Editing	
	Sec. 1 .....	Mr. Kildow
	Sec. 2 .....	Mr. Hage
82su	Supervision of School Publications	Mr. Kildow
109su	History of Journalism	Mr. Emery
111su	International Communications and the Foreign Press	Mr. Natziger
121su	The Newspaper in a Dynamic Society	Mr. Gerald
130su	Communication Agencies and Public Opinion	Mr. Casey
140su	Interpretation of Contemporary Affairs	Mr. Gerald
210su	Research in Newspaper Problems	Mr. Natziger

**SECOND TERM**

14su	Newspaper Reporting	
	Sec. 1 .....	Mr. Emery
	Sec. 2 .....	Mr. Haapa
	Sec. 3 .....	Mr. Haapa
	Sec. 4 .....	Mr. Copperud
55su	Advertising and Newspaper Typography	Mr. Barnhart
68su	Problems in Radio Writing	Mr. Charnley
73su	Magazine Writing and Editing	Mr. Copperud
94su	Newspaper Advertising	Mr. Barnhart
110su	History of Journalism	Mr. Emery
112su	Current Newspaper Problems	Mr. Wiggins
141su	Interpretation of Contemporary Affairs	Ar.
177su	Freedom of the Press and Communication Law	Mr. Gerald
210su	Research in Newspaper Problems	Mr. Gerald

**LINGUISTICS AND COMPARATIVE PHILOLOGY**

**FIRST TERM**

*Japanese*

1su	Beginning Japanese	Mrs. Syro-Boyarsky
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*Russian*

1su	Beginning Russian	Mr. Reichardt
102su	Dostoevski and Tolstoy	Mr. Reichardt



SECOND TERM

*Japanese*

2su Beginning Japanese ..... Mrs. Syro-Boyarsky

*Russian*

2su Beginning Russian ..... Miss Niemi  
81su Reading of Non-literary Russian Texts ..... Miss Niemi

MATHEMATICS

FIRST TERM

1su Higher Algebra ..... Mr. Thompson  
6su Trigonometry ..... Mr. Graves  
7su College Algebra ..... Mr. Colson  
8su Commerce Algebra ..... Mr. Lindgren  
15su Elementary Mathematical Analysis I ..... Mr. Crawford  
20su Mathematics of Investment ..... Mr. Donsker  
30su Analytic Geometry ..... Mr. Jensen  
50su Calculus I—Differential Calculus ..... Miss Carlson  
106su Differential Equations ..... Mr. Hatfield  
107su Advanced Calculus I ..... Mr. Wegner  
109su Theory of Numbers ..... Mr. Hatfield  
136su Solid Analytic Geometry ..... Mr. Wegner  
143su Fourier, Legendre, and Bessel Series ..... Mr. Cameron  
248su Reading and Research ..... Mr. Cameron

SECOND TERM

1su Higher Algebra ..... Mr. Thompson  
6su Trigonometry ..... Mr. Graves  
7su College Algebra ..... Mr. Bockelheide  
16su Elementary Mathematical Analysis II ..... Mr. Crawford  
20su Mathematics of Investment ..... Mr. Lindgren  
51su Calculus II—Integral Calculus ..... Miss Gibbens  
108su Advanced Calculus II ..... Mr. Wegner  
118su Vector Analysis ..... Mr. Wegner

MUSIC

FIRST TERM

1su Ear Training ..... Ar.  
1Tsu Music Theory ..... Mr. Aliferis  
4Tsu Music Theory ..... Ar.  
11su Piano ..... Miss Kendall,  
Mr. Rymer,  
Mr. Stephens  
12su Voice ..... Miss Hull,  
Mr. Schuessler  
13su Violin ..... Mr. Peterson  
14-26su Instruments of the Orchestra ..... Ar.  
27su Organ ..... Mr. Jennings  
31su Music Appreciation ..... Ar.  
36su History of Music ..... Mr. Ferguson  
44su University Chorus ..... Mr. Aliferis  
49su Gregorian Chant ..... Rev. Keller  
69su Advanced Gregorian Chant ..... Rev. Keller  
70-71-  
72su Normal Piano ..... Miss Kendall  
73su Advanced Harmony ..... Mr. Aliferis  
76su Form and Analysis ..... Mr. Stephens  
77-78-  
79su Composition-Orchestration ..... Mr. Ferguson  
83-84-  
85su Advanced Composition ..... Mr. Ferguson  
101su American Music ..... Ar.

200-201- 202su	Basis of Musical Expression .....	Mr. Ferguson
205-206- 207su	Composition in Larger Forms .....	Mr. Ferguson
209-210- 211su	Advanced Topics in Musical Analysis .....	Mr. Oberg
212su	Special Problems in Music .....	Mr. Oberg

#### SECOND TERM

2Tsu	Music Theory .....	Mr. Aliferis
5Tsu	Music Theory .....	Ar.
11su	Piano .....	Mr. Lindsay, Mr. Rymer, Mr. Stevens
12su	Voice .....	Mr. Schuessler
13su	Violin .....	Mr. Peterson
14-26su	Instruments of the Orchestra .....	Ar.
27su	Organ .....	Mr. Berryman
32su	Music Appreciation .....	Ar.
45su	University Chorus .....	Mr. Aliferis
74su	Advanced Harmony .....	Mr. Aliferis

#### PERSONAL ORIENTATION

See General Studies, page 35.

#### PHILOSOPHY

##### FIRST TERM

1su	Problems .....	Mr. Sellars
2su	Logic .....	Mr. Cerf
3su	Ethics .....	Mr. Swanson
50su	History of Philosophy (Ancient) .....	Mr. Sellars
63su	Principles of Mature Thinking .....	Mr. Feigl
114su	American Philosophy .....	Mr. Otto
115su	Contemporary Philosophy .....	Mr. Cerf
153su	Philosophy of Science .....	Mr. Feigl
191su	Seminar .....	Mr. Feigl
191Asu	Seminar: Evolutionism in American Thought .....	Mr. Otto

##### SECOND TERM

1su	Problems .....	Mr. Conger
2su	Logic .....	Mr. Holmer
3su	Ethics .....	Mr. Wiggins
52su	History of Philosophy (Modern) .....	Miss Shaw
70su	Modern Philosophies of Social Reform .....	Mr. Wiggins
170su	Philosophy of History .....	Mr. Holmer
181su	Psychology of Religion .....	Mr. Conger
192su	Seminar .....	Mr. Conger and others

#### PHYSICS

##### FIRST TERM

1-2-3su	Introduction to Physical Science, Part I .....	Mr. Kruglak
1a-2a- 3asu	Introduction to Physical Science, Part I (with laboratory) .....	Mr. Kruglak
4su	General Physics, Part I (Mechanics and Heat) .....	Mr. Kruglak
6su	General Physics, (Electricity) .....	Mr. Fossum
7su	General Physics, Part I (Mechanics and Heat) .....	Mr. Weinberg
9su	General Physics, Part I (Sound and Light) .....	Mr. Slector
73su	Intermediate Thermodynamics, Part I .....	Mr. Ney
111su	Modern Physics .....	Mr. Oppenheimer
216su	Seminar in Contemporary Theoretical Physics .....	Mr. Weinberg

## SECOND TERM

1-2-3su	Introduction to Physical Science, Part II .....	Mr. Wall
1a-2a- 3asu	Introduction to Physical Science, Part II (with laboratory)	Mr. Wall
4su	General Physics, Part II (Mechanics and Heat) .....	Mr. Wall
7su	General Physics, Part II (Mechanics and Heat) .....	Mr. Lofgren
9su	General Physics, Part II (Sound and Light) .....	Mr. Valasek
73su	Intermediate Thermodynamics, Part II .....	Mr. Ney
110su	Modern Experimental Physics .....	Mr. Schmitt
134su	Experimental Optics .....	Mr. Valasek
136su	Spectrum Analysis .....	Mr. Valasek
213su	Seminar in Contemporary Experimental Physics .....	Mr. Ney

## POLITICAL SCIENCE

### FIRST TERM

1su	American Government and Politics .....	Mr. Latham
2su	American Government and Politics .....	Mr. Christensen
15su	Elements of Political Science .....	Mr. McLaughlin
25su	World Politics .....	Mr. Mills
100su	The Constitution and Social Change .....	Mr. Latham
120su	Municipal Functions .....	Mr. Ludwig
128su	Community Planning and Administration .....	Mr. Ludwig
137su	American Political Parties .....	Mr. Christensen
160su	American Political Thought .....	Mr. McClosky
161su	Problems of Democracy .....	Mr. McClosky
162su	Recent Political Thought .....	Mr. Kirkpatrick
183su	International Law in the Postwar World .....	Mr. McLaughlin
198su	Contemporary World Problems .....	Mr. Mills
201su	Seminar in American Government, Politics and Administration .....	Mr. Short
298su	Seminar in International Relations .....	Ar.

### SECOND TERM

1su	American Government and Politics .....	Mr. Gibbon
2su	American Government and Politics .....	Mr. Gibbon
7su	Comparative European Government .....	Mr. Kampelman
15su	Elements of Political Science .....	Mr. Kampelman
126su	Government and the Economic Order .....	Mr. Latham
130su	Public Administration .....	Mr. Latham
143su	Government of U.S.S.R. .....	Mr. McClosky
184su	International Organization .....	Ar.
192su	Far Eastern International Relations .....	Ar.
202su	Seminar in American Government, Politics and Administration .....	Ar.
298su	Seminar in International Relations .....	Ar.

## PSYCHOLOGY

### FIRST TERM

1su	General Psychology .....	Mr. Clark, Mr. Heron
1su, 2su	General Psychology .....	Ar.
4su, 5su	Introductory Laboratory Psychology .....	Mr. Herbert, Mr. John
70su	Principles of Psychological Measurement .....	Mr. Clark
124su	Psychology of Learning .....	Mr. Heron
130su	Occupational and Vocational Psychology .....	Mr. McClelland
144su, 145su	Abnormal Psychology .....	Mr. Bird
191su	Theory of Projective Techniques .....	Mr. Rotter
210su	Research in Psychology .....	Mr. Heron, Mr. Clark
250su	Topics in Psychology .....	Mr. Heron, Mr. Clark

291su	Practicum in the Use and Interpretation of Projective Techniques .....	Mr. Rotter
SECOND TERM		
Asu	Elementary Psychology .....	Mr. Herbert
2su	General Psychology .....	Mr. Heron, Mr. Clark
1su, 2su	General Psychology .....	Ar.
4su, 5su	Introductory Laboratory Psychology .....	Mr. John
111su	Frontiers of Psychology .....	Mr. Heron
125su,		
126su	Psychology of Individual Differences .....	Miss Tyler
160su	Psychology in Personnel Work .....	Mr. Longstaff
171su,		
172su	Introduction to Clinical Psychology .....	Mr. Meehl
210su	Research in Psychology .....	Mr. Heron, Mr. Clark
250su	Topics in Psychology .....	Mr. Heron, Mr. Clark

### ROMANCE LANGUAGES

#### FIRST TERM

##### *French*

1su	Beginning French .....	Mr. Clefton
2su	Beginning French .....	Ar.
3su	Intermediate French .....	Ar.
4su	Intermediate French .....	Mr. Fermaud
54su	Practical French Conversation .....	Ar.
119su	Eighteenth Century French Literature: Voltaire .....	Mr. Sirich
159su	Contemporary Novel II: Social Problems .....	Mr. Fermaud
166su	French Poetry after 1850 .....	Mr. Clefton
259su	Directed Readings for Graduate Students .....	Ar.

##### *Spanish*

1su	Beginning Spanish .....	Mr. Sirich
2su	Beginning Spanish .....	Ar.
3su	Intermediate Spanish .....	Ar.
4su	Intermediate Spanish .....	Ar.
53su	Spanish Composition .....	Mr. Cuneo
54su	Spanish Conversation .....	Ar.
62su	Advanced Spanish Conversation .....	Ar.
73su	Latin-American Culture .....	Mr. Cuneo
74su	Survey of Spanish-American Literature .....	Ar.
80su	La Novela Ibero-Americana y Los Problemas Sociales .....	Mr. Cuneo
110su	Nineteenth Century Drama .....	Mr. Pattison
141su	Contemporary South American Poetry .....	Ar.
175su	Twentieth Century Novel .....	Mr. Pattison
259su	Directed Reading for Graduate Students .....	Ar.

#### SECOND TERM

##### *French*

1su	Beginning French .....	Ar.
2su	Beginning French .....	Ar.
3-4su	Intermediate French .....	Mr. Desgranges
55su	Practical French Conversation .....	Mr. Desgranges
120su	Eighteenth Century French Literature: Rousseau .....	Mr. Clefton
260su	Directed Reading for Graduate Students .....	Ar.

##### *Spanish*

1su	Beginning Spanish .....	Ar.
2su	Beginning Spanish .....	Ar.
3-4su	Intermediate Spanish .....	Ar.
55su	Spanish Conversation .....	Ar.
Ar.	1 or 2 literary courses at the Sr.-Grad. level to be announced later .....	Ar.
260su	Directed Reading for Graduate Students .....	Ar.

RUSSIAN

See Linguistics and Comparative Philology, page 38.

SOCIAL SCIENCE

See General Studies, page 35.

SOCIOLOGY AND SOCIAL WORK

FIRST TERM

*Sociology*

1su	Introduction to Sociology .....	Mr. Selznick, Mr. Kyllonen
2su	Individual and Minority Group Adjustment .....	Mr. Selznick, Mr. Johnson
14su	Rural Sociology .....	Mr. Marshall
45su	Social Statistics .....	Mr. Sletto
91su	Case Methods Applied to Study of Human Problems .....	Miss Nagel
110su	Rural Community Organization .....	Mr. Marshall
118su	Interaction of Racial and Cultural Groups in America .....	Mr. Kirkpatrick
119su	The Family .....	Mr. Kirkpatrick
162su	Field Work and Laboratory Training in Social Research .....	Mr. Sletto
200su	Seminar in Sociology .....	Staff

*Social Work*

129su	Principles of Social Case Work .....	Mrs. Scott
134su	The Child and the State .....	Mr. Guilford
151su	Public Welfare .....	Mr. Guilford
173Bsu	Behavior Problems in Older Children .....	Miss Blodgett
180su	Field Work .....	Miss Nagel
236su	Special Studies in Social Work .....	Staff
240su	General Seminar in Social Work .....	Staff

SECOND TERM

*Sociology*

1su	Introduction to Sociology .....	Mr. Monachesi, Mr. Toews, Mr. Zadrozny
2su	Individual and Minority Group Adjustment .....	Mr. Johnson
49su	Social Problems .....	Mr. Toews
53su	Elements of Criminology .....	Mr. Topping
103su	Sociology of Conflict .....	Mr. Topping
120su	Social Life and Cultural Change .....	Mr. Schneider
132su	Juvenile Courts and Probation .....	Mr. Monachesi
145su	Theories of Social Reconstruction .....	Mr. Schneider
200su	Seminar in Sociology .....	Staff

*Social Work*

124su	Community Organization .....	Mr. Kidneigh
130su	Principles of Social Case Work .....	Mrs. Clendenning
133su	Social Case Work in Health Problems .....	Mrs. Clendenning
139su	Personality Development as It Affects Case Work Prac- tice .....	Mrs. Shea
170su	Introductory Psychiatry .....	Dr. Hincley
171su	Descriptive Neuropsychiatry .....	Dr. Baker
173A <sub>su</sub>	Behavior Problems in Younger Children .....	Miss Templin
176su	Dynamics of Human Behavior Based on Psychoanalytic Theory .....	Dr. Lippman
181su	Field Work .....	Mrs. Shea
236su	Special Studies in Social Work .....	Staff
240su	General Seminar in Social Work .....	Staff

**SPEECH**  
**FIRST TERM**

	Speech Clinic .....	Miss Thorn and staff
1-2-3su	Fundamentals of Speech .....	Mr. Gilkinson and staff
31su	Introduction to the Theater .....	Mr. Whiting
32su	Beginning Acting .....	Mrs. Turner
34su	Stagecraft .....	Mr. Andrus
Ed.C.I.		
59su	Speech in Elementary Grades .....	Mrs. Chapman
61su	Personality Development through Speech .....	Mr. Bryngelson
65su	Radio Speech .....	Mr. Ziebarth
66su	Radio Drama .....	Mr. Dusenbury
67su	Phonetics .....	Mr. Dusenbury
81su	Interpretative Reading .....	Mr. Thompson
93su	Costuming .....	Miss Hetzel
102su	Argumentation and Persuasion .....	Mr. Howell
106su	Discussion .....	Mr. Howell
111su	Stage Direction .....	Mr. Lippman
122su	Introduction to Research .....	Mr. Gilkinson
125su	Speech for the Deaf .....	Ar.
127su	Language in Training for the Deaf .....	Mr. Hedgewik
151su		
(Ed.C.I.		
140)	Teaching of Speech .....	Mr. Gilkinson
152su	Problems of Hearing .....	Mr. Hedgecock
162su	Speech Pathology .....	Mr. Bryngelson
164-165-		
166su	Clinical Methods in Speech Pathology .....	Mr. Bryngelson
181su	Readings in Speech .....	Staff
207su	Seminar in Rhetoric and Persuasion .....	Mr. Howell
291su	Research in Special Problems .....	Staff

**SECOND TERM**

	Speech Clinic .....	Mrs. Chapman and staff
1-2-3su	Fundamentals of Speech .....	Ar.
33su	Beginning Acting .....	Mr. Thompson
65su	Radio Speech .....	Mr. Ziebarth
71su	Play Production .....	Mr. Thompson
81su	Interpretative Reading .....	Mrs. Turner
82su	Interpretative Reading .....	Mrs. Turner
91su	Scenic Design .....	Ar.
112su	Stage Direction .....	Mr. Whiting
181su	Readings in Speech .....	Staff
291-292su	Research in Special Problems .....	Staff

**ZOOLOGY**  
**FIRST TERM**

1su	General Zoology .....	Mr. Olson
21su	Histology .....	Mr. Ringoan
22su	Comparative Anatomy .....	Mr. Eddy
107su	Protozoology .....	Mr. Osterud
181su	Endocrines and Reproduction .....	Mr. Ringoan
197su	Problems .....	Ar.

**SECOND TERM**

2su	General Zoology .....	Mr. Osterud
51su	Introductory Animal Parasitology .....	Mr. Wallace
109su	Problems .....	Ar.

**INSTITUTE OF TECHNOLOGY**  
**COLLEGE OF ENGINEERING AND ARCHITECTURE**

**AERONAUTICAL ENGINEERING**  
**SUMMER QUARTER**

1su	Aeronautics .....	Ar.
100su	Aerodynamics .....	Ar.
120su	Airplane Design .....	Ar.
130su	Airplane Design Laboratory .....	Ar.

**SCHOOL OF ARCHITECTURE**  
**SUMMER QUARTER**

AD-Isu	Architectural Design .....	} Mr. Cerny, Mr. Gilbertson, Mr. Heath, Mr. McClure, Mr. Stone, Mr. Robertson
AD-IIsu	Architectural Design .....	
AD-IIIsu	Architectural Design .....	
AD-IVsu	Architectural Design .....	
DP-Isu	Drawing and Painting .....	} Mr. Burton, Mr. Turner
DP-IIsu	Drawing and Painting .....	
DP-IIIsu	Drawing and Painting .....	
DP-IVsu	Drawing and Painting .....	
DP-Vsu	Drawing and Painting .....	
M-Isu	Modeling .....	
M-IIsu	Modeling .....	
M-IIIsu	Modeling .....	

**CIVIL ENGINEERING**  
**SUMMER QUARTER**

11su	Surveying .....	Mr. Boon, Mr. Lyon
13su	Surveying .....	Mr. Boon
14su	Surveying .....	Mr. Morris
16su	Surveying .....	Mr. Brinker
31su	Stresses in Structures .....	Mr. Graves
32su	Design in Steel .....	Mr. Graves
33su	Design in Timber .....	Mr. Graves
38su	Structural Design .....	Mr. Andersen
39su	Structural Design .....	Mr. Andersen
41su	Structural Design .....	Mr. Andersen
130su	Statically Indeterminate Structures .....	Mr. Hughes
131su	Structural Analysis .....	Mr. Hughes
132su	Structural Design .....	Mr. Hughes
161su	Hydrology .....	Mr. Cornell
162su	Water Supply .....	Mr. Schroeppfer
163su	Sewerage and Sewage Treatment .....	Mr. Schroeppfer
233su	Advanced Foundations .....	Mr. Andersen
247su	Seminar in Structural Engineering .....	Mr. C. A. Hughes
280su	Civil Engineering Research (Sanitary) .....	Mr. Schroeppfer

**DRAWING AND DESCRIPTIVE GEOMETRY**  
**SUMMER QUARTER**

1su	Engineering Drawing .....	Mr. Williams and others
2su	Engineering Drawing .....	Mr. Quaid and others
3su	Descriptive Geometry .....	Mr. Eggers and others

7su	Engineering Drawing (Chemistry and Chemical Engineering) .....	Mr. Springer and others
8su	Descriptive Geometry (Chemistry and Chemical Engineering) .....	Mr. Palmer and others
10su	Solid Geometry .....	Mr. Barich and others
21su	Drafting (Civil Engineering) .....	Mr. Myers and others
22su	Structural Detailing .....	Mr. Myers and others
23su	Structural Detailing .....	Mr. Bullen and others
26su	Drafting (Electrical Engineering) .....	Mr. Palmer and others
28su	Drafting (Aeronautical Engineering) .....	Mr. Bullen and others
29su	Drafting (Aeronautical Engineering) .....	Mr. Schuck and others
55su	Production Illustration .....	Mr. Schuck

#### FIRST TERM

41-42-43su	Technical Drawing .....	Mr. Doseff
81-82-83su	Advanced Drawing .....	Mr. Doseff
86-87su	Anatomical Drawing .....	Mr. Doseff

#### SECOND TERM

41-42-43su	Technical Drawing .....	Mr. Doseff
81-82-83su	Advanced Drawing .....	Mr. Doseff
86-87su	Anatomical Drawing .....	Mr. Doseff

### ELECTRICAL ENGINEERING

#### SUMMER QUARTER

11su	Elements of Electrical Engineering .....	Ar.
12su	Elements of Electrical Engineering Laboratory .....	Ar.
13su	Elements of Electrical Engineering .....	Ar.
14su	Elements of Electrical Engineering Laboratory .....	Ar.
15su	Elements of Electrical Engineering .....	Ar.
16su	Elements of Electrical Engineering Laboratory .....	Ar.
36su	Electrical Engineering Survey (M.E.) .....	Ar.
37su	Electrical Engineering Survey (M.E.) .....	Ar.
38su	Electrical Engineering Survey (M.E.) .....	Ar.
43su	Electrical Engineering Survey (Chem.E.) .....	Ar.
44su	Electrical Engineering Survey (Chem.E.) .....	Ar.
45su	Electrical Engineering Survey (Chem.E.) .....	Ar.
46su	Electrical Engineering Survey and Aeronautical Radio .....	Ar.
47su	Electrical Engineering Survey and Aeronautical Radio .....	Ar.
111su	Junior Electrical Engineering .....	Ar.
112su	Junior Electrical Engineering Laboratory .....	Ar.
113su	Junior Electrical Engineering .....	Ar.
114su	Junior Electrical Engineering Laboratory .....	Ar.
115su	Junior Electrical Engineering .....	Ar.
116su	Junior Electrical Engineering Laboratory .....	Ar.
117su	Engineering Electronics .....	Ar.
118su	Engineering Electronics Laboratory .....	Ar.
119su	Engineering Electronics .....	Ar.
120su	Engineering Electronics Laboratory .....	Ar.
121su	Senior Electrical Engineering .....	Ar.
122su	Senior Electrical Engineering Laboratory .....	Ar.



123su	Senior Electrical Engineering .....	Ar.
124su	Senior Electrical Engineering Laboratory .....	Ar.
125su	Senior Electrical Engineering .....	Ar.
126su	Senior Electrical Engineering Laboratory .....	Ar.
132su	Electrical Design .....	Ar.
134su	Electrical Design .....	Ar.
138su	Power Systems .....	Ar.
161-167su	Radio Communication and Ultra High Frequency Engineering .....	Ar.
162-168su	Radio Communication and Ultra High Frequency Engineering .....	Ar.
163-169su	Radio Communication and Ultra High Frequency Engineering .....	Ar.
164su	Electric Communication Circuits .....	Ar.
165su	Electric Communication Circuits .....	Ar.

### GENERAL ENGINEERING

#### SUMMER QUARTER

70su	Slide Rule .....	Mr. Schuck
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### MATHEMATICS AND MECHANICS

#### SUMMER QUARTER

9su	Higher Algebra .....	Ar.
11su	College Algebra .....	Mr. McEwen, Mr. McElrath
12su	Trigonometry .....	Mr. Amundson, Mr. Munro
13su	Analytic Geometry .....	Mr. Priestler, Mr. Laws
17su	Refresher Course in Mathematics .....	Mr. Laws
24su	Calculus I: Differential .....	Mr. Turrittin, Mr. McElrath
25su	Calculus II: Integral .....	Mr. Siler, Mr. Laws
26su	Statics .....	Mr. Herrick, Mr. Amundson
84su	Technical Mechanics (Chem., Chem.E., and Prebusiness)	Mr. Polansky
85su	Strength of Materials (Chem.E., E.E., and Prebusiness)	Mr. Cutts
86su	Fluid Mechanics (Aero.E., E.E., Chem.E.)	Mr. Loye
87su	Materials Testing Laboratory (Chem.E., E.E., and Prebusiness)	Mr. Stavnes
127su	Dynamics .....	Mr. Wilcox
128su	Strength of Materials .....	Mr. Miller
129su	Fluid Mechanics .....	Mr. Doeringsfeld
130su	Fluid Mechanics (M.E.) .....	Mr. Stavnes
141su	Materials Testing Laboratory .....	Mr. Miller
143su	Hydraulics Laboratory .....	Mr. Doeringsfeld
151su	Differential Equations .....	Mr. McEwen
152su	Calculus IV: Advanced Calculus .....	Mr. Munro

### MECHANICAL ENGINEERING

#### SUMMER QUARTER

11su	Materials and Processing I .....	Mr. Hughes
12su	Materials and Processing II .....	Mr. Holtby
13su	Materials and Processing III .....	Mr. Hughes
14su	Materials and Processing IV .....	Mr. Crowder
15su	Materials and Processing V .....	Mr. Crowder
16su	Materials and Processing VI .....	Mr. Johnston
17su	Materials and Processing VII .....	Mr. Holtby
20su	Elementary Machine Design .....	Mr. Palmer
21su	Kinematics .....	Mr. Palmer
22su	Mechanism .....	Mr. Larsen
23su	Dynamics of Machinery .....	Mr. LaJoy

24su	Elements of Machine Design .....	Mr. Mark
33su	Mechanical Engineering Laboratory I .....	Mr. Lee
34su	Mechanical Engineering Laboratory II .....	Mr. Lee
35su	Mechanical Engineering Laboratory III .....	Mr. Lee
121su	Machine Design .....	Mr. Medlin
131su	Thermodynamics .....	Mr. Lee
132su	Thermodynamics .....	Mr. Ritchey
141su	Heat Power Engineering .....	Mr. Ritchey
150su	Internal Combustion Engines .....	Mr. Murphy
159su	Internal Combustion Engine Laboratory .....	Mr. Murphy
171su	Elements of Industrial Engineering and Management .....	Mr. Laitala
174su	Motion and Time Study Laboratory .....	Mr. Laitala

FIRST TERM

2su	Woodworking Practice .....	Mr. Johnston
3su	Machine Woodworking .....	Mr. Johnston

INSTITUTE OF TECHNOLOGY  
SCHOOL OF CHEMISTRY

ANALYTICAL CHEMISTRY

FIRST TERM

1su	Quantitative Analysis (Gravimetric) .....	Mr. Herr
7su	Quantitative Analysis (Premedics) .....	Mr. Herr
96su	Senior Topics .....	Mr. Herr
123su	Advanced Analytical Chemistry .....	Mr. Herr
203su	Selected Topics in Analytical Chemistry .....	Mr. Herr
301su	Research in Quantitative Analysis .....	Mr. Herr

SECOND TERM

2su	Quantitative Analysis (Volumetric) .....	Mr. Herr
7su	Quantitative Analysis (Premedics) .....	Mr. Herr
96su	Senior Topics .....	Mr. Herr
123su	Advanced Analytical Chemistry .....	Mr. Herr
203su	Selected Topics in Analytical Chemistry .....	Mr. Herr
301su	Research in Quantitative Analysis .....	Mr. Herr

INORGANIC CHEMISTRY

FIRST TERM

1su	General Inorganic Chemistry (Sec. 1) .....	Mr. Pervier
1su	General Inorganic Chemistry (Sec. 2) .....	Mr. Lindeke
1su	General Inorganic Chemistry (Sec. 3) .....	Mr. Pray
1su	General Inorganic Chemistry (Sec. 4) .....	Mr. Johnson
4su	General Inorganic Chemistry (Sec. 1) .....	Mr. Lindeke
4su	General Inorganic Chemistry (Sec. 2) .....	Mr. Nebergall
4su	General Inorganic Chemistry (Sec. 3) .....	Mr. Pray
4su	General Inorganic Chemistry (Sec. 4) .....	Mr. Johnson
6su	General Inorganic Chemistry .....	Mr. Pervier or Mr. Brasted
9su	General Inorganic Chemistry (Sec. 1) .....	Mr. Negergall
9su	General Inorganic Chemistry (Sec. 2) .....	Mr. O'Brien
11su	Semimicro Qualitative Analysis .....	Mr. Barber
12su	Semimicro Qualitative Analysis .....	Mr. Maynard
13su	Semimicro Qualitative Analysis .....	Mr. Heisig
102su	Advanced Semimicro Qualitative Analysis .....	Mr. Barber
105su	Advanced Inorganic Chem. (Coordination Compounds) .....	Mr. Maynard
109su	Synthetic Inorganic Chemistry .....	Mr. Heisig
301su	Research in Inorganic Chemistry .....	Mr. Barber, Mr. Heisig, Mr. Maynard, Mr. O'Brien

SECOND TERM

2su	General Inorganic Chemistry (Sec. 1)	Mr. Brasted
2su	General Inorganic Chemistry (Sec. 2)	Mr. Lindeke
2su	General Inorganic Chemistry (Sec. 3)	Mr. Pray
2su	General Inorganic Chemistry (Sec. 4)	Mr. Johnson
5su	General Inorganic Chemistry (Sec. 1)	Mr. Lindeke
5su	General Inorganic Chemistry (Sec. 2)	Mr. Nebergall
5su	General Inorganic Chemistry (Sec. 3)	Mr. Pray
5su	General Inorganic Chemistry (Sec. 4)	Mr. Johnson
7su	General Inorganic Chemistry	Mr. Reyerson
10su	General Inorganic Chemistry (Sec. 1)	Mr. Nebergall
10su	General Inorganic Chemistry (Sec. 2)	Mr. O'Brien
11su	Semimicro Qualitative Analysis	Mr. Barber
12su	Semimicro Qualitative Analysis	Mr. Barber
103su	Advanced Inorganic Chemistry	Mr. O'Brien
302su	Research in Inorganic Chemistry	Mr. Reyerson, Mr. Barber, Mr. O'Brien

ORGANIC CHEMISTRY

FIRST TERM

1su	Elementary Organic Chemistry	Mr. Arnold
110su*	Organic Qualitative Analysis	Mr. Parham
116su	Heterocyclic Compounds	Mr. Parham
301su	Research	Mr. Arnold

SECOND TERM

2su	Elementary Organic Chemistry	Mr. Lauer
130su†	Organic Quantitative Analysis	Mr. Parham
139su*	Advanced Preparations	Mr. Parham
302su	Research	Mr. Lauer

PHYSICAL CHEMISTRY

FIRST TERM

104su	Physical Chemistry Laboratory	Mr. Crawford
105su	Physical Chemistry Laboratory	Mr. Crawford
106su	Physical Chemistry Laboratory	Mr. Crawford
107asu	Elementary Physical Chemistry (Premed.)	Mr. Crawford
301su	Research in Physical Chemistry	Mr. Crawford

SECOND TERM

104su	Physical Chemistry Laboratory	Mr. Lipscomb
105su	Physical Chemistry Laboratory	Mr. Lipscomb
106su	Physical Chemistry Laboratory	Mr. Lipscomb
107bsu	Elementary Physical Chemistry (Premed.)	Mr. Lipscomb
301su	Research in Physical Chemistry	Mr. Lipscomb

CHEMICAL ENGINEERING

FIRST TERM

102su	Unit Operations (Sec. 1)	Mr. Stoppel, Mr. Madden
102su	Unit Operations (Sec. 2)	Mr. Comley
105su	Fuels and Combustion (Sec. 1)	Mr. Jackson, Mr. Stephenson
105su	Fuels and Combustion (Sec. 2)	Mr. Ceaglske
131su	Inorganic Technology	Mr. Stephenson
132su	Organic Technology	Mr. Mann
151-152su	Chemical Manufacture	Mr. Mann, Mr. Stoppel, Mr. Ceaglske, Mr. Madden

\* Limit of 20 students in courses 110 and 139.

† Limit of 12 students in course 130.

SECOND TERM

102su	Unit Operations (Sec. 1)	Mr. Stoppel, Mr. Madden
102su	Unit Operations (Sec. 2)	Mr. Comley
105su	Fuels and Combustion (Sec. 1)	Mr. Jackson, Mr. Stephenson
105su	Fuels and Combustion (Sec. 2)	Mr. Ceaglske,
131su	Inorganic Technology	Mr. Stephenson
132su	Organic Technology	Mr. Mann
151-152su	Chemical Manufacture	Mr. Mann, Mr. Stephenson, Mr. Jackson, Mr. Comley

THIRD TERM

151-152su	Chemical Manufacture	Mr. Madden, Mr. Jackson, Mr. Ceaglske, Mr. Comley
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INSTITUTE OF TECHNOLOGY  
SCHOOL OF MINES AND METALLURGY

METALLOGRAPHY  
SUMMER QUARTER

152su	Metallography for Aeronautical Engineers	Mr. Mackay
153su	Metallography for Metallurgical Engineers	Mr. Jerabek
156su	Metallography for Mechanical, Mining and Petroleum Engineers	Mr. Jerabek
160su	Metallography for Chemical Engineers	Mr. Mackay

METALLURGY  
SUMMER QUARTER

1su	Assaying	Mr. Bitsianes
106su	Nonferrous Metallurgy	Mr. Bitsianes

FIRST TERM

11su	Metallurgy of Pig Iron	Mr. Joseph
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MINING  
FIRST TERM

15su	Surveying Field Trip	Mr. Lambert, Mr. Heilig, Mr. Lacabanne
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THIRD TERM

139su	Mining Field Trip	Mr. Parker, Mr. Cooke
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COLLEGE OF AGRICULTURE, FORESTRY, AND  
HOME ECONOMICS

AGRICULTURAL BIOCHEMISTRY  
FIRST TERM

1su	Elementary Organic Chemistry	Ar.
2su	Quantitative Methods	Mr. Bleidner
118su	Laboratory Problems in Biochemistry	Staff
120su	Proteins	Mr. Sandstrom
130su	Proteins Laboratory	Mr. Sandstrom

SECOND TERM

118su	Laboratory Problems in Biochemistry	Staff
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## AGRICULTURAL ECONOMICS

### FIRST TERM

1su	Principles of Economics I (2 sections) .....	Mr. Lowe
102su	Farm Organization .....	Mr. Pond
247su	Seminar in Research Methods .....	Mr. Waite

### SECOND TERM

2su	Principles of Economics II .....	Mr. Lowe
244su	Seminar in Cooperative Marketing .....	Mr. Koller

## AGRICULTURAL EDUCATION

For list of courses in Agricultural Education, see courses listed on page 59. under the College of Education.

## AGRICULTURAL ENGINEERING

### FIRST TERM

40su	Mechanical Training .....	Mr. Dent
41su†	Metal Work .....	Mr. Dent

### SECOND TERM

40su	Mechanical Training .....	Mr. Dent
42su	Art Metal Work .....	Mr. Dent

## AGRONOMY AND PLANT GENETICS

### FIRST AND SECOND TERMS

201su	Research in Farm Crops .....	Mr. Dunham
241su	Research in Plant Genetics .....	Mr. Burnham, Mr. Hayes, Mr. Rinke
244su	Laboratory Methods in Plant Breeding .....	Staff

## ANIMAL AND POULTRY HUSBANDRY

### FIRST TERM

1su	Poultry Production .....	Mr. Sloan
56su	Livestock Feeding .....	Mr. Ferrin
213su	Research in Animal Husbandry .....	Staff
214su	Research in Poultry Husbandry .....	Staff

### SECOND TERM

57su	Livestock Feeding .....	Mr. Ferrin
112su	Animal Breeding .....	Mr. Winters
213su	Research in Animal Husbandry .....	Staff
214su	Research in Poultry Husbandry .....	Staff

## DAIRY HUSBANDRY

### FIRST AND SECOND TERMS

208su	Research in Dairy Production (Preliminary graduate work required) .....	Mr. Fitch, Mr. Petersen, Mr. Gullickson, Mr. Gilmore
209su	Research in Dairy Manufacturing (Preliminary graduate work required) .....	Mr. Combs, Mr. Coulter
215su	Research in Dairy Bacteriology (Preliminary graduate work required) .....	Mr. Macy

## ENTOMOLOGY AND ECONOMIC ZOOLOGY

### FIRST TERM

5su	Economic Entomology .....	Ar.
13su*	Field Zoology .....	Mr. Dawson, Mr. Peters

\* Offered at Itasca Park.

† Available to high school instructors in agriculture for a three-week period, credit arranged.

FIRST AND SECOND TERMS

197su	Introduction to Research .....	Staff
204su	Research in Entomology .....	Staff

FORESTRY

FIRST TERM

(Offered at Itasca)

Open to students registered in Forestry in the University or who have had one year in a junior college or other college and plan to register in Forestry.

5su	Field Silviculture .....	Ar.
6su	Field Botany (Botany) .....	Ar.
6su	Field Mensuration (Forestry) .....	Mr. Brown
11su	Camp Management .....	Mr. Brown
13su	Field Zoology (see also under Entomology and Economic Zoology) .....	Mr. Dawson

HOME ECONOMICS

FIRST TERM

27su	Related Art Problems .....	Ar.
45su	Quantity Cookery .....	Miss Ames
50su	Textiles .....	Miss Phelps
86su	Home Management: Operation, and Maintenance Laboratory	
	Sec. 1 .....	Ar.
	Sec. 2 .....	Ar.
116su	Family Clothing Problems .....	Miss Phelps
125su	Advanced Costume Design .....	Ar.
140su	New Developments in Food Preparation .....	Ar.
142su	Experimental Cookery .....	Ar.
170su	Current Problems in Nutrition .....	Miss Biester
179su	Readings in Nutrition .....	Miss Biester
180su	Home Planning and Furnishing .....	Ar.
186su	Income Management Problems .....	Ar.
279su	Seminar in Nutrition .....	Miss Biester

SECOND TERM

85su	Home Management: Operation and Maintenance, Lectures .....	Ar.
86su	Home Management: Operation and Maintenance, Laboratory	
	Sec. 1 .....	Ar.
	Sec. 2 .....	Ar.

HORTICULTURE

FIRST AND SECOND TERMS

190-191-192su	Special Problems .....	Mr. Alderman and staff
247su	Report on Special Horticultural Topics .....	Mr. Alderman and staff
249su	Research in Horticultural Crop Breeding .....	Mr. Krantz, Mr. Currence, Mr. Wilcox, Mr. Hutchins

PLANT PATHOLOGY AND BOTANY

FIRST AND SECOND TERMS

206su	Research in Plant Pathology .....	Mr. Stakman and others
210su	Research in Mycology .....	Mr. Stakman, Miss Dsdall

257su	Research Problems in Applied Plant Physiology .....	Mr. Landon
263su	Research Problems in Agricultural Botany .....	Mr. Larson, Mr. Stakman

### RHETORIC

#### FIRST TERM

1su	Communications I, Sections 1, 2 .....	Mr. Nichols, Mr. Humphrey
2su	Communications II .....	Mr. Seidenkranz
3su	Communications III .....	Mr. Brown
22su	Public Speaking .....	Mr. Nichols
33su	American Life in American Literature .....	Mr. Seidenkranz
51su	Exposition .....	Mr. Brown

#### SECOND TERM

1su	Communications I .....	Mrs. Jasper
2su	Communications II .....	Miss Thurston
3su	Communications III .....	Mr. Drake
22su	Public Speaking .....	Mr. Drake
51su	Exposition .....	Miss Thurston

### SOILS

#### FIRST AND SECOND TERMS

104su*	Soil Mapping .....	Mr. McMiller
202su*	Research Problems in Soils .....	Mr. Rost and staff

## BIOLOGICAL STATION OF THE UNIVERSITY OF MINNESOTA

See page 21.

### LAW SCHOOL

The Law School will offer a complete quarter (June 18 to August 29) of Law work with courses for both beginning and advanced students. Registration will be for the quarter, not for a single term. The restrictions on the admission of nonresidents will apply to the summer quarter.

Tuition fees for the quarter are: resident, \$42; nonresident, \$71. Credit hour fee: resident, \$3.50; nonresident, \$6. There will be the usual incidental fee of \$9.65 for the Coffman Memorial Union, the Health Service, the *Minnesota Daily*, etc. Deposit fee for the summer quarter only, \$2.

### MEDICAL SCHOOL

#### ANATOMY

##### FIRST TERM

165su*	Hematology .....	Dr. Sundberg and staff
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##### SUMMER QUARTER

103su*	Human Histology .....	Dr. Rasmussen, Dr. Kirschbaum, and staff
107su*	Human Embryology .....	Dr. Wells and staff
134su*	Anatomy of the Newborn .....	Dr. Wells
150su*	Special Topics in Neurology .....	Dr. Rasmussen
204su*	Research in Anatomy .....	Staff

\* Before registering, students must have approval of instructor in charge.

## BACTERIOLOGY AND IMMUNOLOGY

### FIRST TERM

53su	General Bacteriology .....	Dr. Skinner
114su	Yeasts, Molds, and Actinomycetes .....	Dr. Skinner
116su	Immunity .....	Dr. Green
201su	Research in Bacteriology .....	Dr. Green

### MEDICINE

#### SUMMER QUARTER

##### *Required*

18-19su	Principles of Medical and Surgical Nursing .....	Ar.
102su	Clinical Chemistry and Microscopy .....	Dr. Watson and staff
104su	Introduction to Internal Medicine .....	Dr. Watson and staff
111su	Clinical Clerkship in Medicine .....	Dr. Watson and staff
111xsu	Clinical Clerkship in Medicine (MGH) .....	Dr. Fahr and staff
112su	Admissions Clerkship .....	Dr. Aagaard and staff
124su	Senior Clerkship in Dermatology .....	Dr. Michelson and staff
124xsu	Senior Clerkship in Dermatology (MGH) .....	Dr. Sweitzer and staff

##### *Elective*

128su	Abnormal Physical Signs in the Chest .....	Dr. Geer
129su	Advanced Physical Diagnosis .....	Dr. Peppard
132su	Diagnosis and Treatment of Diseases of the Lungs .....	Dr. Myers
135su	Essentials of Diagnosis and Treatment of Heart Disease .....	Dr. Shapiro
136su	The Respiratory Organs in Health and Disease .....	Dr. Myers
159su*	Assistantship, Dermatology and Syphilis (MGH) .....	Dr. Sweitzer and staff
160su*	Assistantship and Conference in Dermatology (UH) .....	Dr. Michelson and staff
161su*	Assistantship in Dermatology (UHD) .....	Dr. Michelson and staff
162su*	Assistantship in Dermatology (MGH) .....	Dr. Sweitzer
163su	Treatment of Syphilis .....	Dr. Michelson
164su	Seminar in Pathology .....	Dr. Winer
165su	Seminar in Dermatology .....	Dr. Michelson and others
166su	Allergy and Dermatology .....	Dr. Michelson

## OBSTETRICS AND GYNECOLOGY

### FIRST AND SECOND TERMS

121su	Obstetrics and Gynecology .....	Dr. McKelvey, Dr. Rogers, Dr. Lund
135su	Clinical Clerkship in Obstetrics and Gynecology (University Hospital) .....	Dr. McKelvey, Dr. Lund
135xsu	Clinical Clerkship in Obstetrics and Gynecology (Minneapolis General Hospital) .....	Dr. Lang and others

\* Before registering, students must have approval of instructor in charge.



OPHTHALMOLOGY AND OTOLARYNGOLOGY

FIRST AND SECOND TERMS

*Required*

104su	Clinic in Diseases of the Ear .....	Dr. Boies, Dr. Hochfilzer, Dr. Tangen, Dr. Hilger, Dr. Priest, Dr. Conner
105su	Clinic in Diseases of the Nose and Throat .....	Dr. Boies, Dr. Hochfilzer, Dr. Tangen, Dr. Hilger, Dr. Priest, Dr. Conner
106su	Clinic in Diseases of the Eye .....	Dr. Hansen, Dr. Stanford, Dr. Hoffman, Dr. Horns, Dr. Dolmage, Dr. Peterson, Dr. Wendland

*Elective*

121su	Operative Clinic in Eye .....	Dr. Hansen, Dr. Hymes, Dr. Hoffman, Dr. Horns, Dr. Dolmage, Dr. Peterson, Dr. Wendland
122su	Ophthalmoscopy .....	Dr. Schwartz, Dr. Lindberg

PATHOLOGY

FIRST AND SECOND TERMS

102su	Special Pathology .....	Dr. McCartney, Dr. Hebbel
104su	Autopsies .....	Staff
109su	Clinical-Pathological Conference .....	Staff
111su	Conference on Autopsies .....	Dr. Bell and staff
201su	Research .....	Staff

PEDIATRICS

FIRST TERM

*Required*

122su	Diseases of Infancy and Childhood (lectures) .....	Dr. McQuarrie, Dr. Platou, Dr. Bosma, Dr. Jensen
124su	Junior Clinical Clerkship in Pediatrics .....	Dr. McQuarrie, Dr. Huenekens, Dr. Bosma, Dr. Jensen, Dr. Grulee
135su	Senior Clinical Clerkship in Pediatrics .....	Dr. McQuarrie, Dr. Seham, Dr. Jensen, Dr. Bosma, Dr. Grulee

*Elective*

156su	Advanced Study of Noncontagious Diseases .....	Dr. McQuarrie
158su	Advanced Study of Contagious Diseases .....	Dr. Platou
162su	Common Behavior Disturbances in Childhood .....	Dr. Jensen, Mrs. Sanborn
208su	Pediatric Research .....	Dr. McQuarrie, Dr. Jensen, Dr. Ziegler

SECOND TERM

*Required*

122su	Diseases of Infancy and Childhood (lectures) .....	Dr. Platou, Dr. Stoesser, Dr. Adams, Dr. Bosma
124su	Junior Clinical Clerkship in Pediatrics .....	Dr. Stoesser, Dr. Huenekens, Dr. Bosma, Dr. Grulee, Dr. Ziegler
135su	Senior Clinical Clerkship in Pediatrics .....	Dr. Adams, Dr. Stoesser, Dr. Seham, Dr. Bosma

*Elective*

156su	Advanced Study of Noncontagious Diseases .....	Dr. Adams, Dr. Ziegler
158su	Advanced Study of Contagious Diseases .....	Dr. Stoesser, Dr. Platou
208su	Pediatric Research .....	Dr. Adams, Dr. Stoesser, Dr. Ziegler

PHARMACOLOGY

FIRST AND SECOND TERMS

8su	Elementary Pharmacology .....	Dr. Bieter, Dr. Wright, Dr. Cranston, Dr. McManus
102su	General and Experimental Pharmacology .....	Dr. Bieter, Dr. Wright, Dr. Cranston, Dr. McManus

PHYSIOLOGY

FIRST TERM

4su	Human Physiology (for pharmacy and home economics students and others) .....	Ar.
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SUMMER QUARTER

113su	Problems in Physiology .....	Ar.
135su	Conferences in Physiology .....	Ar.
203su	Research in Physiology .....	Ar.

PSYCHIATRY AND NEUROLOGY

FIRST AND SECOND TERMS

*Required*

101su	Clinical Neuropsychiatry Lectures .....	Dr. Hastings and staff
103su	Junior Clinical Clerkship .....	Dr. Hastings and staff

FIRST TERM

*Elective*

*Nonmedical Students*

70su and 170su	Introductory Psychiatry .....	Dr. Hinckley
171su and 171su	Social Work .....	Dr. Hinckley
171su and 173su	Descriptive Neuropsychiatry .....	Dr. Cottrell
	Social Work .....	Dr. Cottrell
	Mental Hygiene Aspects of Public Health Nursing (for graduate nurses only) .....	Miss Shalit

FIRST AND SECOND TERMS

*Elective*

*Medical Students*

143su	Problems and Survey in Neuropathology (limited to two students). Credits and hours arranged .....	Dr. Baker
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*Graduate Students*

208su	Clinical Neurology .....	Dr. Baker
208xsu	Clinical Psychiatry .....	Dr. Hastings and staff
209su	Research in Neurology .....	Dr. Baker
212su	Survey of Neuropathology .....	Dr. Noran
216su	Neuropsychiatric Case Conference .....	Dr. Hastings and staff
226su	Neurological-Neurosurgical Conference .....	Dr. Baker
228su	Research in Neuropathology .....	Dr. Baker

SCHOOL OF PUBLIC HEALTH

FIRST TERM

50su	Public and Personal Health .....	Dr. Thomson
58su	Maternal and Child Hygiene .....	Ar.
59su	Health of the School Child .....	Ar.
60su	Tuberculosis and Its Control .....	Dr. Myers
62-63su	Principles of Public Health Nursing .....	Miss Mickey
66su	Field Work—Rural Nursing .....	Miss Mickey
67su	Field Work—Family Health Agency .....	Miss Mickey
101su	Public Health Administration and Field Work .....	Dr. Anderson and associates
102su	Environmental Sanitation I .....	Mr. Whittaker
110su	Biometric Principles .....	Mr. Treloar
111su	Biostatistics Laboratory .....	Mr. Treloar
119su	Field Practice in Environmental Sanitation .....	Mr. Whittaker
126su	Industrial Health Problems .....	Dr. Foker
129su	Field Work in Industrial Nursing .....	Ar.
171su	Problems in Public Health Nursing .....	Miss Mickey
183su	Workshop in Public Health Nursing Field Instruction .....	Visiting lecturer

SECOND TERM

65su	Field Work—School Nursing .....	Miss Taylor
66su	Field Work—Rural Nursing .....	Miss Taylor
67su	Field Work—Family Nursing .....	Miss Taylor
70su	Practice Teaching in Home Nursing for Public Health Nurses .....	Miss Groat
100su	Preventive Medicine .....	Dr. Anderson
101su	Public Health Administration and Field Work .....	Dr. Anderson and associates
104su	Epidemiology I .....	Dr. Anderson
125su	The Community Health Education Program .....	Miss Groat

133su	Mental Hygiene Aspects of Public Health Nursing .....	Ar.
140su	Vital Statistics .....	Mr. Treloar
170su	Supervision in Public Health Nursing .....	Miss Taylor
171su	Problems in Public Health Nursing .....	Miss Taylor
174su	Supervision Laboratory .....	Miss Taylor
184su	Workshop in Mental Hygiene .....	Ar.

### RADIOLOGY

#### FIRST AND SECOND TERMS

103asu	Neuroradiology for Neuropsychiatric Clerks. Part of Neuropsychiatry 103 .....	Dr. Peterson
111su	Medical Roentgenologic Conference for Medical Clerks. Part of Medicine 111 .....	Dr. Rigler and staff
112su	Roentgen Diagnostic Clinic for Medical Clerks. Part of Medicine 112 .....	Dr. Rigler and staff
121su	Roentgenology and Radiation Therapy and Biophysics .....	Dr. Rigler, Dr. Stenstrom
124su	Pediatric-Roentgenologic Conference for Pediatric Clerks. Part of Pediatrics 124 .....	Dr. Rigler and staff
135asu	Radiation Therapy for Surgical Clerks. Part of Surgery 135 .....	Dr. Stenstrom and staff
135bsu	Roentgen Diagnostic Clinic for Surgical Clerks. Part of Surgery 135 .....	Dr. Rigler and staff
135csu	Surgical Roentgenologic Conference for Surgical Clerks. Part of Surgery 135 .....	Dr. Rigler and staff
163asu	Neurosurgical-Roentgenologic Conference for Neuro- surgical Clerks. Part of Surgery 163 .....	Dr. Peterson, Dr. Peyton

### SURGERY

#### FIRST AND SECOND TERMS

##### Required

129su	Surgical Clinics for Juniors .....	Surgical staff
135su	Clinical Clerkship .....	Staff
135asu	Clinical Pathology of Tumors .....	Surgical staff
135bsu	Reading Course .....	Surgical staff
135csu	Medical-Surgical-Pathological Conference .....	Medical, surgical, pathological staffs
135dsu	Roentgenological-Surgical Conference .....	Radiology and surgical staff
135esu	Surgical Ward Conference .....	Surgical staff
135fsu	Outpatient Surgical Clinic, General Surgery, and Proc- tology .....	Dr. Wangenstein, Dr. Paine, Dr. Dennis, Dr. Hanson, Dr. Varco, Dr. J. K. Ander- son
135gsu	Applied Surgical Anatomy .....	Surgical staff
135hsu	Fractures and Traumatic Surgery .....	MGH surgical staff
145su	Orthopedic Clerkship (for seniors) .....	Dr. Cole and staff
163su	Neurosurgery Clerkship (for seniors) .....	Dr. Peyton and staff

170su	Urology Clerkship (for seniors) .....	Dr. Creevy and staff
	<i>Elective</i>	
139su	Operative Surgery .....	Surgical staff
152su	Problems in Clinical Investigations .....	Dr. Wangenstein, Dr. Creevy, Dr. Paine, Dr. Peyton, Dr. Dennis, Dr. Varco
159su	Clinic in Traumatic Surgery .....	Dr. Zierold
167su	Problems in Experimental Surgery .....	Dr. Wangenstein, Dr. Creevy, Dr. Paine, Dr. Peyton, Dr. Dennis, Dr. Varco
169su	Diagnostic Bedside Surgical Clinic .....	Dr. Zierold

SECOND TERM

*Required*

122su	Fractures and Dislocations for Juniors (lectures) .....	Dr. Zierold, Dr. Campbell, Dr. Regnier
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SCHOOL OF NURSING+

FIRST TERM

Nu.Ed.60su	Ward Administration .....	Mrs. Randall
Nu.Ed.62su	Personnel Program in Schools of Nursing .....	Miss Gordon
Nu.Ed.63su	Motion Study .....	Mr. Laitala
Nu.Ed.68su	Construction and Use of Examinations and Other Measurements in Basic Nursing Courses .....	Miss Gordon
Nu.Ed.72su*	Principles of Learning and Methods of Teach- ing in Schools of Nursing .....	Miss Harrington
Nu.Ed.73su	Principles of Economics in Nursing Service Administration .....	Miss Gorgas
Nu.Ed.85su	Fundamentals of Nursing Service Administra- tion .....	Guest Lecturer

SUMMER QUARTER

Ed.T.51Asu	Special Methods of Teaching in Schools of Nursing .....	Miss Harrington
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SCHOOL OF DENTISTRY

FIRST TERM

Ar.	Clinical and Laboratory Work .....	Dr. Shellman, Dr. Yock, Dr. Brecht, Dr. Listick
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SECOND TERM

Ar.	Clinical and Laboratory Work .....	Dr. Shellman, Dr. Yock, Dr. Brecht
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COLLEGE OF EDUCATION

AGRICULTURAL EDUCATION

FIRST TERM

Agr.Ed.82su	Methods in Teaching Agriculture .....	Mr. Field
Agr.Ed.121su	Enterprise Analysis .....	Mr. Peterson
Agr.Ed.221su	Field Problems .....	Mr. Field, Mr. Peterson

\* A limited amount of observation may be arranged.  
† For courses in Public Health Nursing, see page 57.

Agr.Ed.232su	Research in Agricultural Education .....	Mr. Field, Mr. Peterson
Agr.Ed.237su	Adult Education in Agriculture .....	Mr. Peterson

#### SECOND TERM

Agr.Ed.54su	Rural Education and Community Leadership .....	Mr. Peterson
Agr.Ed.91su	Supervised Teaching Experience .....	Mr. Peterson
Agr.Ed.104su	Planning Programs .....	Mr. Field
Agr.Ed.221su	Field Problems .....	Mr. Field, Mr. Peterson
Agr.Ed.232su	Research in Agricultural Education .....	Mr. Field, Mr. Peterson

#### ART EDUCATION

##### FIRST TERM

Art Ed.1su	General Design .....	Mrs. Torbert
Art Ed.18su	Survey of Art in Life and Education .....	Mr. Gayne
Art Ed.24su	Water Color Painting .....	Mrs. Rollins
Art Ed.26su	Oil Painting .....	Ar.
Art Ed.28su	Advanced Drawing Techniques .....	Mrs. Rollins
Art Ed.31su	General Handcrafts .....	Mr. Thomas
Art Ed.61su	Figure Drawing and Painting .....	Ar.
Art Ed.63su	Landscape Drawing and Painting .....	Ar.
Art Ed.68Asu	Print Processes .....	Mrs. Rollins
Art Ed.75su	Metal .....	Mr. Thomas
Art Ed.76su	Textiles: Fundamental Weaving .....	Miss Berglund
Art Ed.77su	Textiles: Advanced Weaving .....	Miss Berglund
Art Ed.78su	Textile Design: Weaving .....	Miss Berglund
Art Ed.124Esu	Advanced Specialized Drawing and Painting .....	Mrs. Rollins
Art Ed.124Esu	Advanced Specialized Drawing and Painting .....	Ar.
Art Ed.153su	Home Design in Society and Education .....	Mrs. Torbert
Art Ed.184su	Advanced Course in Methods and Supervision of Art in the Elementary School .....	Mr. Gayne
Art Ed.295Esu	Special Problems in Art Education .....	Mr. Gayne

##### SECOND TERM

Art Ed.4su	Basic Drawing .....	Mr. Wiggin
Art Ed.51su	Introduction to Industrial Design .....	Mr. Wiggin
Art Ed.67su	Illustration for Advertising and Other Purposes .....	Mr. Wiggin
Art Ed.70su	Wood Sculpture and Carving .....	Mr. Lupori
Art Ed.73su	Ceramics .....	Mr. Lupori
Art Ed.157su	Art Movements of Twentieth Century Scandi- navia .....	Miss Lien
Art Ed.284su	Reading and Research in Art Education .....	Miss Lien
Art Ed.295su	Special Problems in Art Education .....	Miss Lien

#### CURRICULUM AND INSTRUCTION

##### FIRST TERM

##### General Courses

Ed.C.I.104su	Adult Education .....	Mr. Nolte
Ed.C.I.105su	Visual Aids in Teaching .....	Mr. Wendt
Ed.C.I.106su	Coordinating of Visual Education Program .....	Mr. Wendt
Ed.C.I.114su	The School Health Education Program .....	Miss Starr
Ed.C.I.129su	Principles and Problems of Teaching Social Hygiene .....	Mr. Griffiths, Dr. Pearce
Ed.C.I.145su	Remedial Reading .....	Mr. Bond, Mr. Tinker
Ed.C.I.171su	Workshop in Curriculum Problems—Minne- apolis Group .....	Mr. Walter Anderson and others

Ed.C.I.171su	Workshop in Curriculum Problems—Experimental Schools .....	Mr. Bossing, Mr. Grim, and others
Ed.C.I.271su	Problems in Curriculum Construction .....	Mr. Bossing, Mr. Cook
Ed.C.I.273su	Problems in Reading .....	Mr. Bond, Mr. Tinker
<i>Elementary Education</i>		
Ed.C.I.59su	Teaching of Speech in the Elementary Schools	Mrs. Chapman
Ed.C.I.102su	The Teaching of the Social Studies in the Elementary School .....	Mr. Young
Ed.C.I.103su	The Teaching of Science in the Elementary School .....	Mr. Croxton
Ed.C.I.119su	Elementary School Curriculum .....	Ar.
Ed.C.I.130su	Problems in Childhood Education .....	Mrs. Fuller
Ed.C.I.131su	Workshop in Childhood Education and Child Development .....	Mrs. Fuller, Miss Headley, Miss Peterson
Ed.C.I.143su	Teaching and Supervision of Reading in the Elementary School .....	Mr. Bond
Ed.C.I.149su	The Teaching and Supervision of Arithmetic in the Elementary School .....	Ar.
Ed.C.I.150su	Supervision and Improvement of Instruction .....	Ar.
Ed.C.I.153su	Supervision and Teaching of English in the Elementary Schools .....	Mr. Archer
Ed.C.I.186su	Laboratory in Elementary Instructional Practices .....	Mr. Staudenmaier
Ed.C.I.263su	Research in Arithmetic Instruction .....	Ar.

#### *Secondary Education*

Ed.C.I.113su	High School Curriculum .....	Ar.
Ed.C.I.122su	Literature for Adolescents .....	Mr. Carlsen
Ed.C.I.136su	Organization and Supervision of Distributive Education Programs .....	Mr. Meyer
Ed.C.I.137su	Materials and Methods in Distributive Education Program .....	Mr. Meyer
Ed.C.I.140su	The Teaching of Speech (also listed as Speech 151) .....	Mr. Gilkinson
Ed.C.I.141su	Cooperative Part-time Distributive Education Classes .....	Ar.
Ed.C.I.142su	Evening Distributive Education Classes .....	Ar.
Ed.C.I.144su	Teaching of Reading in Junior and Senior High Schools .....	Mr. Tinker
Ed.C.I.168su	Current Developments in the Social Studies .....	Mr. Maynard
Ed.C.I.191su	Advanced Course in Teaching and Supervision of Secondary School Mathematics .....	Mr. Donovan Johnson
Ed.C.I.201su	Problems in Teaching the Social Studies .....	Mr. Young
Ed.C.I.266su	Supervision of High School Instruction .....	Mr. Keller
Ed.C.I.287su	Advanced Course in the Teaching of Science .....	Mr. Croxton
Ed.C.I.296su	Special Problems in Teaching English .....	Miss Smith

#### *Higher Education*

Ed.C.I.288su	Problems of Higher Education and Teacher Training: Workshop .....	Mr. Cooper, Miss Eckert, and others
Ed.C.I.250su	Higher Education in the United States .....	Miss Eckert

SECOND TERM

General Courses

Ed.C.I.105su	Visual Aids in Teaching .....	Mr. Luce
Ed.C.I.107su	Radio in Education .....	Mr. Tyler
Ed.C.I.117su	Rural Education for Administrators and Teachers .....	Mr. Archer
Ed.C.I.145su	Remedial Reading .....	Mr. Bond
Ed.C.I.271su	Problems in Curriculum Construction .....	Mr. Bossing, Mr. Cook
Ed.C.I.273su	Problems in Reading .....	Mr. Bond

Elementary Education

Ed.C.I.102su	The Teaching of the Social Studies in the Elementary School .....	Mr. Wesley
Ed.C.I.103su	The Teaching of Science in the Elementary School .....	Mr. Kenneth Anderson
Ed.C.I.119su	Elementary School Curriculum .....	Mr. Harry Johnson
Ed.C.I.143su	Teaching and Supervision of Reading in the Elementary School .....	Mr. Bond
Ed.C.I.150su	Supervision and Improvement of Instruction .....	Mr. Harry Johnson
Ed.C.I.187su	Workshop in Rural and Village School Problems .....	Mr. Archer and others

Secondary Education

Ed.C.I.113su	High School Curriculum .....	Mr. Bossing
Ed.C.I.138su	Problems in Distributive Education .....	Mr. Meyer
Ed.C.I.139su	Coordination Techniques in Business Education .....	Mr. Meyer
Ed.C.I.168su	Current Developments in the Social Studies .....	Mr. Maynard
Ed.C.I.170su	Curriculum and Course of Study Construction .....	Mr. Bossing
Ed.C.I.204su	Social Studies Curriculum .....	Mr. Wesley
Ed.C.I.266su	Supervision of High School Instruction .....	Mr. Umstatt

EDUCATIONAL ADMINISTRATION

FIRST TERM

General Courses

Ed.Ad.124su	Public School Administration .....	Mr. Oppenheimer
Ed.Ad.210su	Financial Aspects of Public School Business Administration .....	Mr. Holy
Ed.Ad.225su	Pupil Personnel Administration .....	Mr. Cramer
Ed.Ad.226su	School Plant Planning and Management .....	Mr. Holy
Ed.Ad.227su	Teacher and Employee Administration .....	Ar.
Ed.Ad.228su	Special Problems in Educational Administration .....	Mr. Neale
Ed.Ad.230su	Public Relations for Schools .....	Ar.

Elementary Education

Ed.Ad.115su	Organization of the Elementary School .....	Mr. Cramer
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Secondary Education

Ed.Ad.133su	Guidance in Secondary Schools .....	Mr. Dugan
Ed.Ad.263su	The Organization of the Secondary School .....	Mr. Keller
Ed.Ad.264su	The Administration of the Instructional Activities of the Secondary School .....	Mr. Drake
Ed.Ad.265su	The Administration of the Non-Instructional Activities of the Secondary School .....	Mr. Drake
Ed.Ad.270su	Special Problems in Secondary Education .....	Mr. Drake

Higher Education

Ed.Ad.174su	The Junior College .....	Mr. Oppenheimer
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SECOND TERM

*General Courses*

Ed.Ad.124su	Public School Administration .....	Ar.
Ed.Ad.210su	Financial Aspects of Public School Business Administration .....	Ar.
Ed.Ad.225su	Pupil Personnel Administration .....	Mr. Cramer
Ed.Ad.226su	School Plant Planning and Management .....	Ar.
Ed.Ad.227su	Teacher and Employee Administration .....	Mr. Rope
Ed.Ad.228su	Special Problems in Educational Administration .....	Mr. Neale
Ed.Ad.230su	Public Relations for Schools .....	Mr. Rope

*Elementary Education*

Ed.Ad.115su	Organization of the Elementary School .....	Mr. Cramer
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*Secondary Education*

Ed.Ad.133su	Guidance in Secondary Schools .....	Mr. Dugan
Ed.Ad.264su	The Administration of the Instructional Activities of the Secondary School .....	Mr. Umstatted
Ed.Ad.270su	Special Problems in Secondary Education .....	Mr. Umstatted

EDUCATIONAL PSYCHOLOGY

FIRST TERM

*General Courses*

Ed.Psy.60su	Introduction to Measurement and Statistics .....	Mr. Van Wagenen
Ed.Psy.120su	Basic Principles of Measurement .....	Mr. Cook
Ed.Psy.133su	Guidance in Secondary Schools .....	Mr. Dugan
Ed.Psy.140su	Instruments and Techniques of Measurement .....	Mr. Cook
Ed.Psy.150su	Psycho-Educational Clinic .....	Mr. Tinker
Ed.Psy.159su	Personality Adjustments in Education .....	Mr. Walter Johnson
Ed.Psy.208su	Methods in Educational Research .....	Mr. Palmer Johnson
Ed.Psy.216su	Statistical Methods in Education .....	Mr. Palmer Johnson
Ed.Psy.225su	Diagnosis and Counseling in a Student Personnel Program .....	Mr. Wrenn
Ed.Psy.233su	Problems in Guidance and Personnel Work .....	Mr. Wrenn
Ed.Psy.253su	Research Problems .....	Mr. G. Lester Anderson, Mr. Cook, Mr. Palmer Johnson, Mr. Van Wagenen, Mr. Wrenn
Ed.Psy.281su	Practice in Personnel Work .....	Mr. Darley, Mr. Dugan
Ed.Psy.293su	Psychology of Learning .....	Mr. G. Lester Anderson

*Elementary Education*

Ed.Psy.113su	Psychology of Elementary School Subjects .....	Mr. Van Wagenen
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SECOND TERM

*General Courses*

Ed.Psy.60su	Introduction to Measurement and Statistics .....	Mr. Palmer Johnson
Ed.Psy.120su	Basic Principles of Measurement .....	Mr. Cook
Ed.Psy.133su	Guidance in Secondary Schools .....	Mr. Dugan
Ed.Psy.159su	Personality Adjustments in Education .....	Mr. Bell

Ed.Psy.217su	Statistical Methods in Education .....	Mr. Palmer Johnson
Ed.Psy.226su	Diagnosis and Counseling in a Student Per- sonnel Program .....	Mr. Bell
Ed.Psy.233su	Problems in Guidance and Personnel Work ..	Mr. Bell, Miss Edwards
Ed.Psy.253su	Research Problems .....	Mr. G. Lester Anderson, Mr. Cook, Mr. Palmer Johnson, Mr. Van Wagenen
Ed.Psy.281su	Practice in Personnel Work .....	Mr. Dugan
Ed.Psy.293su	Psychology of Learning .....	Mr. G. Lester Anderson

#### *Elementary Education*

Ed.Psy.183su	Education of Gifted Children .....	Mr. Van Wagenen
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### GENERAL EDUCATION

#### FIRST TERM

Ed.51Asu	Introduction to Secondary School Teaching .....	Mr. Schrupp
Ed.51Bsu	Introduction to Secondary School Teaching .....	Mr. G. Lester Anderson
Ed.51Csu	Introduction to Secondary School Teaching .....	Mr. Mitchell

#### SECOND TERM

Ed.51Asu	Introduction to Secondary School Teaching .....	Mr. Van Wagenen
Ed.51Bsu	Introduction to Secondary School Teaching .....	Mr. G. Lester Anderson
Ed.51Csu	Introduction to Secondary School Teaching .....	Mr. Mitchell
Ed.81su	Introduction to Education for Public Health Nurses .....	Miss Grout

### HISTORY AND PHILOSOPHY OF EDUCATION

#### FIRST TERM

H.Ed.140su	Philosophies of Modern Education .....	Mr. Brameld
H.Ed.155su	History of Public Education in the United States .....	Miss Alexander
H.Ed.180su	The School and the Social Order .....	Mr. Brameld

#### SECOND TERM

H.Ed.176su	Conflicting Issues in Modern Education .....	Ar.
H.Ed.180su	The School and the Social Order .....	Ar.

### HOME ECONOMICS EDUCATION

#### FIRST TERM

H.E.Ed.191su	Advanced Course in the Teaching of Home Economics .....	Miss Rose
H.E.Ed.194A-Bsu	Adult Education in Home Economics .....	Ar.
H.E.Ed.243su	Trends in Home Economics .....	Miss Rose

#### SECOND TERM

H.E.Ed.295su	Problems in Home Economics Education Workshop .....	Mrs. Army
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### INDUSTRIAL EDUCATION

A definite schedule of courses for this department could not be prepared early enough for inclusion in the Preliminary Announcement. Offerings in manipulative and in professional subjects will be made in both summer terms of 1947. They will be of both undergraduate and graduate level. The schedule is being planned in

view of increasing enrolment and in an attempt to satisfy individual and group desires as to type of instruction and special working arrangements. Interested persons, both women and men, should request the Director of Summer Session, 406 Administration Building, to mail the regular Summer Session bulletin which is now in preparation.

This department serves both industrial arts and vocational-industrial (federally aided) teachers, co-ordinators, supervisors, administrators, and teacher-trainers. In addition to a four-year undergraduate curriculum, there are major programs toward the award of M.Ed., M.A., and Ph.D. degrees. Early consideration should be given to the filing of duplicate transcripts of credit from all institutions attended since high school completion. There is the possibility of acceptance in transfer of a maximum of nine quarter credits (six semester credits) at the Master's level. Doctoral programs may include graduate work completed in approved institutions, when courses are of type appropriate to the study pattern and the professional intentions of the candidate.

Bulletins of the College of Education and of the Graduate School may be obtained from the Office of Admissions and Records, 105 Administration Building. Supplementary mimeographed materials may be secured from and letters of inquiry may be addressed to Professor Homer J. Smith, 200 Eddy Hall, University of Minnesota, Minneapolis 14, Minnesota.

## METHODS AND DIRECTED TEACHING

### FIRST TERM

#### General Courses

Ed.T.52su	Directed Teaching .....	Mr. Grim
<i>Elementary Education</i>		
Ed.T.55su	Principles of Early Childhood Education .....	Miss Peterson
Ed.T.76Asu	Methods and Observation in the Nursery School .....	Miss Peterson
Ed.T.76Csu	Methods and Observation in the Kindergarten .....	Miss Headley
Ed.T.77A or Csu	Directed Teaching .....	Mrs. Fuller
Ed.T.78su	Workshop in Childhood Education .....	Mrs. Fuller, Miss Headley, Miss Peterson

#### Secondary Education

Ed.T.66Amsu	The Teaching of Composition in Secondary Schools .....	Mr. Carlsen
Ed.T.66Bmsu	The Teaching of Literature in Secondary Schools .....	Mr. Carlsen
Ed.T.67AmBmsu	The Teaching of Secondary School Mathematics .....	Mr. Donovan Johnson
Ed.T.68AmBmsu	Methods of Teaching Secondary School Science .....	Mr. Croxton
Ed.T.69AmBmsu	Methods of Teaching the Social Studies .....	Mr. Maynard

### SECOND TERM

#### School Health

Ed.T.83su	Methods and Materials of School Health Education .....	Miss Starr
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## MUSIC EDUCATION

### FIRST TERM

Mu.Ed.4-5-6su	Applied Instrumental Technique .....	Mr. Ivory and others
Mu.Ed.50Asu	Primary Methods .....	Mr. Winslow and ar.
Mu.Ed.59su	Choral Literature and Conducting .....	Ar.
Mu.Ed.65su	Instrumentation .....	Ar.
Mu.Ed.68su	Conducting of Instrumental Music—Survey .....	Mr. Ivory

Mu.Ed.103Esu	Psychological Foundations of Music Education	Mr. Winslow
Mu.Ed.150Esu	Elementary Music Education Workshop	Mr. Winslow, Mr. Ivory, and others
Mu.Ed.220Esu	Survey and Evaluation of Research in Music Education	Mr. Winslow
Mu.Ed.225Esu	Advanced Applied Music	Ar.

#### SECOND TERM

Mu.Ed.4-5-6su	Applied Instrumental Technique	Mr. Ivory, Mr. Prescott
Mu.Ed.50Asu	Primary Methods	Mr. Winslow
Mu.Ed.50Bsu	Intermediate Methods	Mr. Winslow
Mu.Ed.63su	Band Conducting	Mr. Prescott
Mu.Ed.64su	Band Organization	Mr. Prescott
Mu.Ed.65su	Instrumentation	Mr. Ivory
Mu.Ed.224Esu	Individual Research Problems in Music Education	Mr. Winslow
Mu.Ed.225Esu	Advanced Applied Music	Ar.

### PHYSICAL EDUCATION FOR MEN

#### FIRST TERM

1Asu	Sports Education (Beginning Swimming)	Ar.
2Asu	Swimming (Sections in Advanced Swimming and Water Safety)	Mr. Ostrander
4A,B,Csu	Football, Basketball, and Track Fundamentals	Mr. Bierman, Mr. MacMillan, Mr. Kelly
5B,Csu	Physical Education Activities (Folk Dances, Mixers, Marching, Apparatus Stunts, Softball)	Mr. Ostrander, Mr. Piper
6Csu	Intramural Sports (Swimming, Diving)	Mr. Ostrander
7Csu	Recreational Games and Sports (Badminton, Archery, Bowling, Horseshoes, Table Tennis)	Mr. Ostrander, Mr. Piper
8su	Tennis and Golf	Mr. Piper, Mr. Smith
9su	Rhythms (Social and Square Dancing)	Mr. Piper
50su	Human Anatomy	Dr. Hauser, Mr. Osell
51su	Mechanics of Movement	Mr. Osell
60su	Athletic Training and Care of Injuries	Mr. Stein
63su	Organization and Administration of Physical Education	Mr. Piper
67,68,69su	Coaching of Football, Basketball, and Track	Mr. Bierman, Mr. MacMillan, Mr. Kelly
73,74,75su	Directed Teaching	Mr. Ostrander
101su	Principles of Physical Education	Mr. Keller
103su	Physical Examination and Adaptation of Activities	Dr. Hauser, Mr. Osell
131su	Industrial Recreation	Mr. Haislet
136su	Leadership in Community Recreation	Mr. Haislet
234su	The Secondary School and College Curriculum in Physical Education	Mr. Nordly
238su	Administration of Physical Education in Colleges and Universities	Mr. Keller
247su	Problems in Health Education, Physical Education, and Recreation	Mr. Nordly

## SECOND TERM

2Bsu	Advanced Swimming and Water Safety .....	Mr. Ostrander
5A,7A,7Bsu	Physical Education Activities (Conditioning Exercises, Tumbling, Volleyball, Low Organized Games, Social Games, Boxing, Wrestling) .....	Mr. Bartelma, Mr. Ostrander
6Csu	Intramural Sports (Swimming) .....	Mr. Ostrander
32su	Introduction to Physical Education .....	Mr. Keller
51su	Mechanics of Movement .....	Mr. Osell
53,54,55su	Methods in Physical Education .....	Mr. Ostrander
73,74,75su	Directed Teaching .....	Mr. Bartelma
135su	Tests and Measurements in Physical Education .....	Mr. Keller
141su	Administration and Supervision of Public Recreation .....	Mr. Haislet
142su	Group Leadership and Community Organization for Recreation .....	Mr. Haislet
233su	Special Administrative Problems in Physical Education in Secondary Schools .....	Mr. Nordly
236su	Recent Literature and Research in Physical Education .....	Mr. Nordly

## PHYSICAL EDUCATION FOR WOMEN

### FIRST TERM

1su	Personal Conditioning .....	Miss Bermingham
7su	Tennis for Beginners .....	Miss Bermingham
11su	Elementary Modern Dance .....	Miss Bell
12su	Social Recreation: Ballroom, Country Dance, and Mixers .....	Miss Bell
13su	Tumbling, Stunts, Pyramids .....	Ar.
21su	Team Sports .....	Miss Rugh
32su	Elementary Swimming .....	Miss Eibner
33su	Intermediate and Advanced Swimming .....	Miss Eibner
37su	Individual and Dual Games .....	Ar.
41su	Officiating Team Sports .....	Miss Rugh
41su	Intermediate and Advanced Modern Dance .....	Miss Bell
61su	Technique of Teaching Team Sports .....	Miss Rugh
65su	Technique of Teaching Individual and Dual Games .....	Ar.
84su	Problems in Physical Education .....	Ar.
90su	Student Teaching .....	Ar.
113su	Physical Education in the Elementary Schools .....	Miss Baker
Ed.C.I.114su	The School Health Education Program .....	Miss Starr

### SECOND TERM

1su	Personal Conditioning .....	Miss Robb
4su	Fundamentals of All Rhythmic Work .....	Miss Bockstruck
8su	Elementary Golf .....	Miss Robb
10su	Teachers' Course in Fundamentals of Physical Education .....	Ar.
12su	Social Recreation .....	Ar.
18su	Elementary Folk Dancing and Games .....	Miss Bockstruck
32su	Elementary Swimming .....	Miss Eibner
33su	Intermediate and Advanced Swimming .....	Miss Eibner
64su	Technique of Teaching Group Gymnastics .....	Ar.
73Bsu	Technique of Teaching Rhythm .....	Miss Bockstruck
Ed.T.83su	Methods and Materials of School Health Education .....	Miss Starr
115su	Philosophy and Trends in Physical Education .....	Miss Starr
116su	Problems in Physical Fitness .....	Miss Robb

# SCHOOL OF BUSINESS ADMINISTRATION

## FIRST TERM

Econ.3su	Elements of Money and Banking .....	Mr. Graves and others
Econ.5su	Elements of Statistics .....	Mr. Belcher and others
Econ.6su	Principles of Economics .....	Mr. Brozen and others
Econ.32su	Beginning Typewriting .....	Miss Peterson
Econ.39su	Intermediate Shorthand .....	Mrs. Bentson
Econ.50su	Insurance Principles .....	Mr. Graves
E.A.51su	Business Law: Contracts .....	Mr. Neville
B.A.54su	Elementary Accounting—Combined Course .....	Ar.
B.A.69su	Retail Store Management .....	Miss Canoyer
B.A.71su	Transportation: Services and Charges I .....	Mr. Nightingale
B.A.86su	Office Management .....	Mrs. Bentson
B.A.89su	Production Management .....	Mr. Immer
B.A.91su	Tabulating Equipment Laboratory .....	Mrs. Boehmler
B.A.93su	Accounting Laboratory .....	Mrs. Boehmler
B.A.101su or Econ.103su	Advanced General Economics .....	Mr. Boddy
B.A.118su	Auditing Procedure .....	Mr. Lund
B.A.130su	Cost Accounting Survey .....	Mr. Reighard
B.A.146su	Investments .....	Mr. Stehman
B.A.150su	Intermediate Accounting .....	Mr. Heilman
B.A.152su	Cost Accounting .....	Mr. Reighard
Econ.155su	Corporation Finance .....	Mr. Stehman, Mr. Borak
Econ.161su	Labor Problems and Trade Unionism .....	Mr. Childs
B.A.167su	Introduction to Industrial Relations .....	Mr. Yoder
Econ.176su	International Commercial Policies .....	Mr. Blakey
B.A.180Dsu	Senior Topics: Industrial Relations .....	Mr. Yoder
B.A.180Esu	Senior Topics: Office Management .....	Miss Peterson
B.A.181Asu	Senior Topics: Accounting .....	Mr. Heilman
Econ.185su or B.A.77su	Economics of Marketing .....	Miss Canoyer
Econ. 189su or B.A.58su	Principles of Taxation .....	Mr. Blakey

## SECOND TERM

Econ.3su	Elements of Money and Banking .....	Mr. Graves and others
Econ.5su	Elements of Statistics .....	Mr. Belcher and others
Econ.7su	Principles of Economics .....	Mr. Brozen and others
B.A.52su	Business Law: Agency, Partnership, and Cor- porations .....	Mr. Neville
B.A.55su	Elementary Accounting—Combined Course .....	Ar.
B.A.88su	Advertising .....	Mr. Hardy
B.A.89su	Production Management .....	Mr. Immer
B.A.94su	Cost Accounting Laboratory .....	Ar.
B.A.102su or Econ.104su	Advanced General Economics .....	Ar.
B.A.112su	Business Statistics .....	Mr. Mudgett
B.A.133su	Standard Costs .....	Mr. Ostlund
B.A.134su	Income Tax Accounting .....	Mr. Reighard
B.A.136su	Internal Auditing and Accounting Control .....	Mr. Reighard
Econ.140su	The Cooperative Movement .....	Miss Canoyer
B.A.142su or Econ.141su	Advanced Money and Banking .....	Mr. Myers, Mr. Borak
Econ.149su	Business Cycles .....	Mr. Myers

B.A.151su	Intermediate Accounting .....	Mr. Lund
B.A.153su	Cost Accounting .....	Mr. Ostlund
Econ.155su	Corporation Finance .....	Mr. Stehman
Econ.178su	Economics of Consumption .....	Miss Canoyer
B.A.180Gsu	Senior Topics: Production Management .....	Mr. Immer
Econ.189su or B.A.58su	Principles of Taxation .....	Mr. Borak

## INSTITUTE OF CHILD WELFARE

### FIRST TERM

C.W.40su	Child Training .....	Mrs. Cummings
C.W.86su	Workshop in Childhood Education (same as Ed.T.78) .....	Mrs. Fuller, Miss Headley, Miss Peterson
C.W.130su	Motor, Linguistic, and Intellectual Develop- ment of the Child .....	Miss Blodgett Miss Blodgett
C.W.141su	Behavior Problems in Older Children .....	Mrs. Fuller
C.W.150su	Problems of Childhood Education (same as Ed.C.I.130) .....	Mrs. Cummings
C.W.170su	Parent Education .....	Mrs. Fuller, Miss Headley, Miss Peterson
C.W.186su	Workshop in Childhood Education and Child Development (same as Ed.C.I.131) .....	Staff
C.W.270su	Readings and Research in Child Development .....	College of Educa-

See also courses listed under Methods and Directed Teaching, page 65.

### SECOND TERM

C.W.80su	Child Psychology .....	Ar.
C.W.131su	Personality, Emotional and Social Develop- ment of the Child .....	Miss Templin
C.W.140su	Behavior Problems in Younger Children .....	Miss Templin
C.W.270su	Readings and Research in Child Development .....	Miss Templin

## LIBRARY INSTRUCTION

### FIRST TERM

Eight-week term: June 16 to August 8, 1947

Lib.Sci.52su	History of Publishing .....	Mr. Strout
Lib.Sci.57su	School Library Problems .....	Mrs. Walraven
Lib.Sci.61su	Library Practice .....	Mr. McDiarmid, Mr. Strout, and others
Lib.Sci.63su	Reference II .....	Mr. Strout
Lib.Sci.66su	The Literature and Bibliography of Education .....	Mrs. Walraven
Lib.Sci.70su	Reading Guidance .....	Mr. Strout
Lib.Sci.71su	Reading Guidance for Children .....	Ar.
Lib.Sci.74su	Library Materials in the School's Instructional Program .....	Mrs. Walraven
Lib.Sci.81su	Theory of Bibliography .....	Ar.
Lib.Sci.82su	Cataloging and Classification .....	Ar.
Lib.Sci.85su	Special Problems .....	Mr. McDiarmid, Mr. Strout, and others

## GENERAL COLLEGE

### FIRST TERM

1su	Individual Orientation .....	Mr. Kloster
5su	Problems of Contemporary Society .....	Mr. McCune
8Asu	Vocational Orientation .....	Mr. Borow

8Bsu	Vocational Orientation Laboratory .....	Mr. Borow
10ABsu	Human Biology .....	Mr. Cieslak
10Xsu	Nature Study .....	Mr. J. M. Harris
12Csu	General Anthropology .....	Ar.
22Asu	Art Today .....	Mr. Hulse
23Asu	Art Laboratory .....	Mr. Hulse
24Asu	Music Today .....	Miss Naes
24Bsu	Music Today .....	Miss Naes
30Asu	Literature Today .....	Mr. Appel
30Dsu	Literature Today .....	Miss Sheldon
31Asu	Writing Laboratory	
	Sec. 1 .....	Mr. Appel
	Sec. 2 .....	Miss Sheldon
32Asu	Speech Laboratory .....	Mrs. Graves
32Bsu	Speech Laboratory .....	Mr. Newgord
33Asu	Speech Studio .....	Mrs. Graves
33Bsu	Speech Studio .....	Mr. Newgord
35Asu	Fundamentals of Mathematics .....	Mr. J. M. Harris
40Bsu	Straight and Crooked Thinking .....	Mr. Ahlén
42Asu	Human Development .....	Mr. Dale Harris
42Bsu	Personal Adjustment .....	Mr. Dale Harris
43Asu	Background of Modern World, Part I .....	Mr. McCune
43Bsu	Historical Biography .....	Mr. Moen
44ABCsu	Retailing and Selling, Part I .....	Miss Determan

#### SECOND TERM

2su	Individual Applications of Social Psychology	Mr. Kloster
6su	Current History .....	Mr. McCune
10Csu	Human Biology (Public Health) .....	Mr. Cieslak
10Xsu	Nature Study .....	Mr. Cieslak
23Bsu	Art Laboratory .....	Mr. Hulse
23AXsu	Art Laboratory (Commercial Art) .....	Mr. Hulse
24Bsu	Music Today .....	Miss Naes
24Csu	Music Today .....	Miss Naes
30Asu	Literature Today .....	Miss Kivits
31Asu	Writing Laboratory .....	Miss Kivits
31Bsu	Writing Laboratory	
	Sec. 1 .....	Miss Sheldon
	Sec. 2 .....	Miss Sheldon
32Csu	Speech Laboratory .....	Mr. Newgord
33Asu	Speech Studio .....	Mr. Newgord
35Asu	Fundamentals of Mathematics .....	Mr. J. M. Harris
43Asu	Background of Modern World, Part II .....	Mr. McCune
43Bsu	Historical Biography .....	Mr. Moen
44ABCsu	Retailing and Selling, Part II .....	Miss Determan



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*The Bulletin of the*  
UNIVERSITY of MINNESOTA

The 55th Summer Session  
Announcement of Courses  
1947

First Term June 17 to July 25  
Second Term July 28 to August 29

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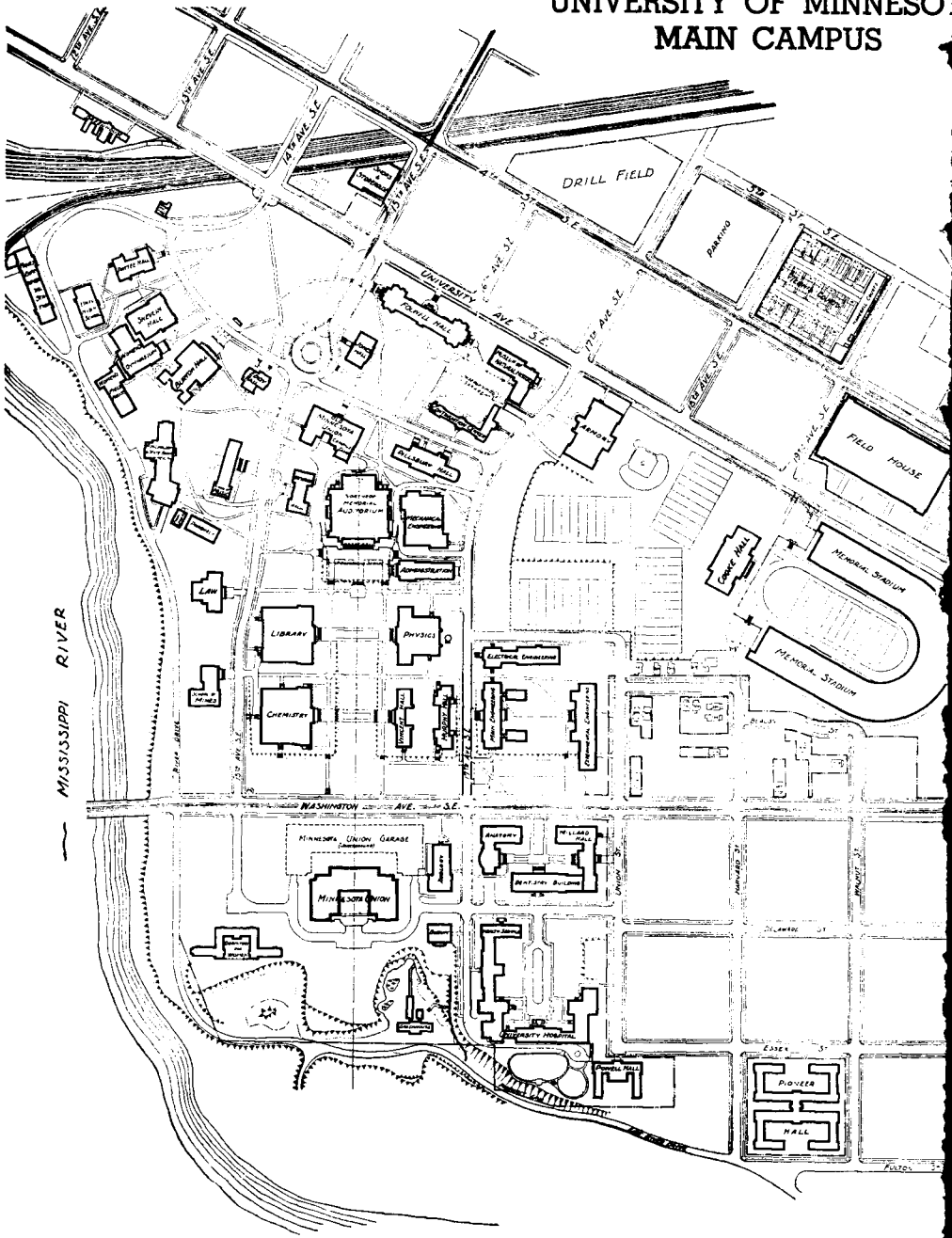
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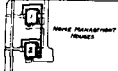
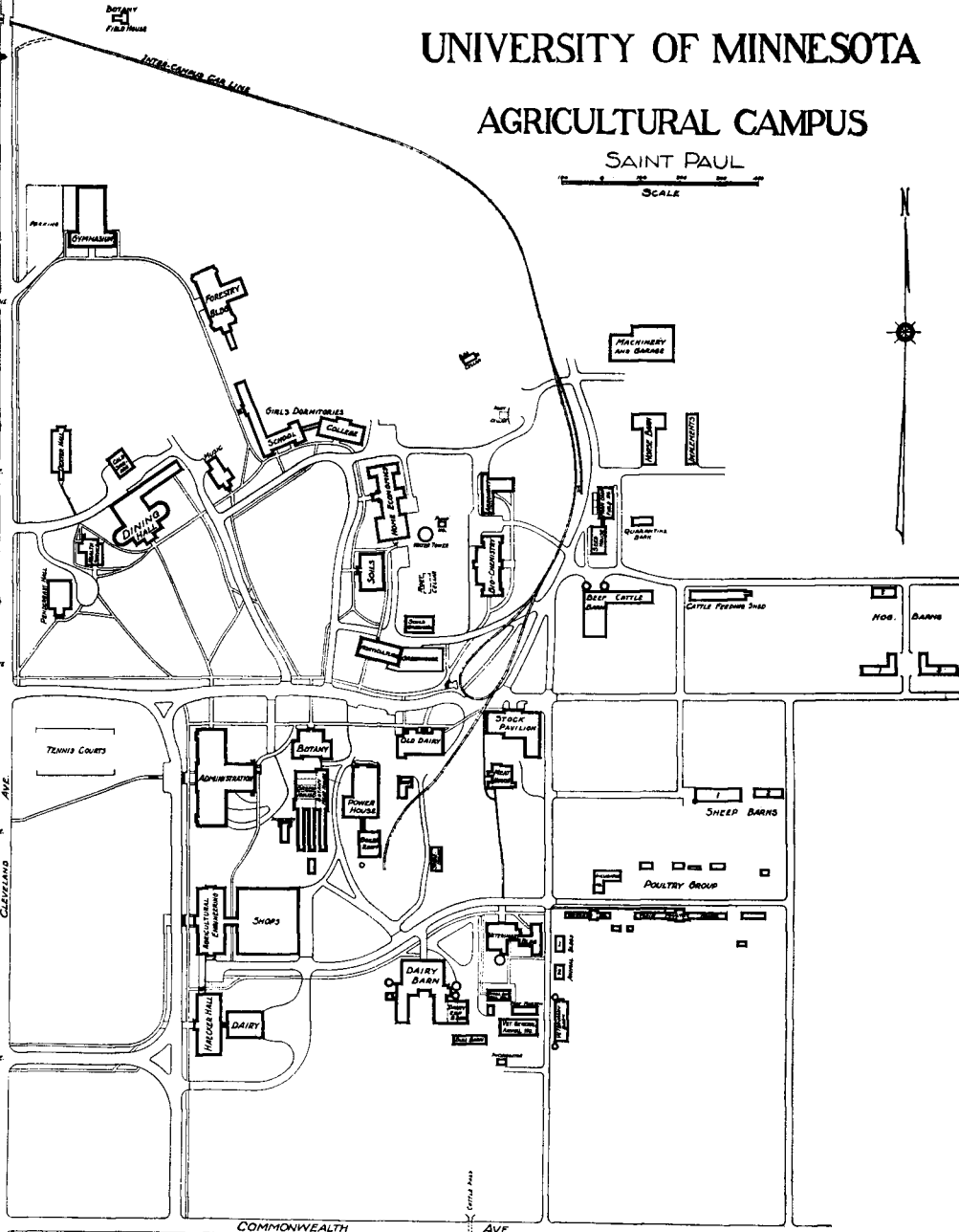
# UNIVERSITY OF MINNESOTA MAIN CAMPUS



# UNIVERSITY OF MINNESOTA

## AGRICULTURAL CAMPUS

SAINT PAUL



## BOARD OF REGENTS

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## CALENDAR

OF

THE 55TH SUMMER SESSION, 1947

(Except Library Instruction)

June	17	Tuesday	Registration, first term
June	18	Wednesday	First term classes begin
July	4	Friday	Holiday (Independence Day)
July	24	Thursday	Commencement convocation
July	25	Friday	First term closes
July	28	Monday	Registration and payment of fees for second term close at 4:00 p.m.
July	29	Tuesday	Second term classes begin
August	29	Friday	Second term closes

## LIBRARY INSTRUCTION

(Eight-week course)

June	17	Tuesday	Registration
June	18	Wednesday	Term begins
July	4	Friday	Holiday (Independence Day)
August	8	Friday	Term closes

## CLASS HOUR SCHEDULE

	Main Campus	University Farm
I Hour	8:00- 8:50	7:45- 8:35
II Hour	9:00- 9:50	8:45- 9:35
III Hour	10:00-10:50	9:45-10:35
IV Hour	11:00-11:50	10:45-11:35
V Hour	12:00-12:50	11:45-12:35
VI Hour	1:00- 1:50	1:00- 1:50
VII Hour	2:00- 2:50	2:00- 2:50
VIII Hour	3:00- 3:50	3:00- 3:50
IX Hour	4:00- 4:50	4:00- 4:50
X Hour	5:00- 5:50	5:00- 5:50

Convocation, IV hour, Thursday

(See Official Daily Bulletin for announcements)

## KEY TO ABBREVIATIONS USED FOR BUILDINGS

### *Main Campus Buildings*

A, Armory	CCS, Center for Continuation Study
Adm, Administration	CH, Cooke Hall
AH, Appleby Hall	CMU, Coffman Memorial Union
Bo, Botany	CoH, Ada Comstock Hall
BoG, Botany Greenhouse	CWI, Child Welfare Institute
Bu, Burton Hall	E, Main Engineering
C, Chemistry Building	EdH, Eddy Hall

EE, Electrical Engineering  
 Ex, Experimental Engineering  
 F, Folwell Hall  
 FdH, Field House  
 Gr, Greenhouse (13th and University  
 av. se.)  
 HL, Hydraulics Laboratory (Hennepin  
 Island)  
 Hospitals  
 CI, Cancer Institute  
 EH, Eustis Hospital  
 EMH, Elliot Memorial Hospital  
 HS, Health Service  
 PW, Psychiatric Ward  
 TM, Todd Memorial Hospital  
 UD, University Dispensary  
 HP, Heating Plant  
 IA, Institute of Anatomy  
 J, Jones Hall  
 L, Law Building  
 Lib, Library Building  
 ME, Mechanical Engineering  
 MeS, Medical Sciences  
 ME<sub>x</sub>, Mines Experiment Station

MH, Millard Hall  
 MNH, Museum of Natural History  
 Mu, Music Building  
 MurH, William J. Murphy Hall  
 NGW, Norris Gymnasium for Women  
 NH, Nicholson Hall  
 NMA, Northrop Memorial Auditorium  
 OSL, Oak Street Laboratories  
 P, Pillsbury Hall  
 Ph, Physics  
 PiH, Pioneer Hall  
 PoH, Louise M. Powell Hall for Nurses  
 Psy, Psychology  
 Pt, Pattee Hall  
 S, Stadium  
 SaH, Sanford Hall  
 SBH, State Board of Health  
 ShH, Shevlin Hall  
 SS, Storehouse and Shops  
 UHS, University High School  
 VH, Vincent Hall  
 WeH, Wesbrook Hall  
 WuH, Wulling Hall  
 Z, Zoology Building

*University Farm Buildings*

Ad, Administration  
 Ag, Agronomy  
 AgrBot, Agricultural Botany  
 BB, Bull Barn  
 BCB, Beef Cattle Barn  
 BeH, Berry House  
 BFH, Botany Field House  
 Bot, Botany  
 BrH, Brewster Hall  
 CS, Carpenter Shop  
 CSP, Cold Storage Plant  
 CSS, Corn Seed Stock Building  
 DCB, Dairy Cattle Barn  
 DeH, Dexter Hall  
 DH, Dining Hall  
 DHD, Dining Hall Dormitory  
 En, Engineering Building  
 FCFH, Farm Crops Field House  
 GH, Green Hall  
 Gy, Gymnasium  
 HB, Horse Barn  
 HE, Home Economics  
 HH, Haecker Hall

HoB, Home Building  
 Hr, Horticulture  
 HS, Health Service  
 LsPav, Livestock Pavilion  
 MB, Music Building  
 MEH, Meredith Hall  
 MS, Machinery Shop  
 MSh, Meat Shop  
 OD, Old Dairy  
 Pe, Pendergast Hall  
 PG, Poultry Group  
 PH, Power House  
 PP, Plant Pathology  
 SB, Swine Barn  
 SH, Seed House  
 SnH, Snyder Hall  
 So, Soils  
 St, Stock Pavilion  
 TH, Thatcher Hall  
 VB, Veterinary Barn  
 Ve, Veterinary  
 WeiH, Weigley House



## SUMMER SESSION

The University of Minnesota has planned the 1947 Summer Session to meet the special needs of veterans, undergraduate students accelerating their training, public school workers, and graduate students working toward advanced degrees, subject to admissions regulations outlined on page 10. Two summer terms have been scheduled, and a full quarter of university work may be completed in the combined sessions through a selection from the many courses offered this year. Comprehensive offerings have been arranged for both graduate and undergraduate students in the academic and the professional fields.

Two special programs will be offered, one on Russia and the Far East (see page 46), and the other a continuation of the special courses begun last summer in the Program of American Studies (see page 17). (See below for descriptions.)

**The University reserves the right to cancel any and all courses in which the registration is insufficient to warrant continuation of the course.**

### RUSSIA AND THE FAR EAST

There are few subjects of greater interest and importance to the statesmen and people of the United States than the Soviet Union and Eastern Asia and probably none on which there are sharper differences of opinion. The Summer Session of 1947 will offer an unusual opportunity for the study of these problems. The members of the university faculty who have offered some courses on Russian language, literature, and history, and on Far Eastern International Relations for a number of years, will be re-enforced by a staff of distinguished authorities from other parts of the country. Additional courses have been planned on the history of the Russian Empire and of the Soviet Union, on the relations of Russia with Turkey, the Balkan States, and with Asia; on the language, literature, government and theories of the Soviet Union; on the history and recent development of China, and on the relations of the United States with Eastern Asia. Among the visiting professors will be Cyril E. Black of Princeton, John N. Hazard of the Russian Institute, Columbia University, Andrei Lobanov-Rostovsky of the University of Michigan, Waldemar Gurian of Notre Dame, Ivar Spector of the University of Washington, and G. Nye Steiger of Simmons College.

### AMERICAN STUDIES

The Program in American Studies, inaugurated in the 1946 Summer Session with a distinguished staff of visiting and resident professors, will continue in 1947 and, it is expected, each summer thereafter. The purpose of the program is to guide students to a broad knowledge of the culture of their own nation, as preparation for enlightened citizenship both in the United States and in the world.

Numerous American courses already established by the Departments of Anthropology, Economics, English, Fine Arts, Geography, History, History of Education, Humanities, Journalism, Music, Philosophy, Political Science, and Sociology will be offered in 1947 by our own faculty and by guest professors. Among the latter will be Herbert Ross Brown (Bowdoin), Richard Dorson (Michigan State), and Walter F. Taylor (Mississippi).

In addition, the following new courses in American Studies will be given for the first time during the summer of 1947:

English 132su	Technique of the Twentieth Century American Novel. Mr. Joseph Warren Beach (Minnesota)
English 161su	Scientific Thought in American Literature to the Civil War. Mr. Theodore Hornberger (Minnesota)
English 178su	Contemporary American Criticism. Mr. William Van O'Connor (Minnesota)
History 83asu and 116asu	American Agricultural History. Mr. E. E. Edwards (U. S. Department of Agriculture)
History 131asu	History of American Science. Mr. Henry Guerlac (Cornell)
History 183asu	Topics in the History of American Agriculture. Mr. E. E. Edwards (U. S. Department of Agriculture)
Philosophy 191Asu	Seminar: Evolutionism and American Thought. Mr. Max Otto (Wisconsin)

These courses carry credit both for students in the departments concerned, and for students enrolled for the B.A., the M.A., and the Ph.D. degrees in American Studies.

### GENERAL INFORMATION

On its Main Campus, situated on the north bank of the Mississippi River in Minneapolis, the University places at the disposal of the Summer Session student the facilities of twelve major subdivisions of a great educational institution—their faculties, libraries, laboratories, observatory, and museums—and in addition the recreational resources of its several swimming pools, golf courses, and tennis courts. The added cultural advantages of two large metropolitan centers offer attractions for the Summer Session student that are unique with the University of Minnesota.

Courses in agriculture and home economics are given on the Agricultural Campus in St. Paul, three miles from the Main Campus in Minneapolis. The Agricultural Campus offers all of the advantages of the Main Campus, being connected with the latter by an intercampus trolley line which gives regular service free to students enrolled for classes on both campuses. The Como-Harriet interurban carline also connects the campuses with the two cities, thus making available all their advantages. The College of Agriculture, Forestry, and Home Economics has its own library, laboratories, and recreational facilities.

A full quarter's work is offered in the two terms, making possible a four-quarter year for students who desire it.

Particular attention is called to the advantages of study in the second term when classes are smaller and more intimate. Students registering in the second term who are teachers and are obliged to return to their schools before the close of the term may, with the consent of instructors, arrange to complete the work *in absentia*. The granting of such permission is not obligatory for any instructor, and students desiring this privilege should ascertain well in advance the courses in which the permission will be granted. They may then make a program accordingly.

The procedure is that of removing a grade of incomplete by examination. To avoid later misunderstanding, the student should secure the permission of the instructor at the beginning of the term, and then arrange with the recorder for the proper examination.

### INTERCAMPUS CAR

For students who are registered for class work on both the Main Campus and the Agricultural Campus, free transportation on the intercampus car is provided. Tickets will be issued to students registered in the College of Agriculture, Forestry, and Home Economics at the office of Admissions and Records at University Farm; to those registered in other colleges, at the university post office in the basement of Coffman Memorial Union, Main Campus.

Students who are registered for classes on the Main Campus and who live in Meredith Hall on the Agricultural Campus will also be given free transportation. Tickets will be issued by the Office of Admissions and Records, University Farm.

#### GENERAL OFFICES

The office of the Director of the Summer Session is in Room 406 Administration Building on the Main Campus. The offices of Admissions and Records and the bursar are on the first floor of the Administration Building. For the convenience of students registering in agriculture and home economics, branch offices are established on the second floor of the Administration Building, Agricultural Campus. The several schools and colleges function in the control of students during the summer just as during any other quarter of the year. Students in one college are free to elect courses in another college, however, on approval of the dean of the college in which the student is registered.

#### UNIVERSITY LIBRARY

The University Library is open to all students of the Summer Session. The library of the Department of Agriculture is located in the Administration Building on the Agricultural Campus. Branch libraries are maintained in a few of the schools and colleges, and there are smaller special collections conveniently grouped in the main library and departmental quarters.

In addition to the University Library and its branches, the Minneapolis Public Library, the St. Paul Public Library, the Minnesota Historical Society, and the James Jerome Hill Memorial Library of St. Paul grant liberal privileges to Summer Session students.

*The Library Handbook*, copies of which may be had gratis upon application at the library, contains information regarding library hours, rules, and other matters essential to the profitable use of the library.

#### UNIVERSITY POST OFFICE

The university post office, for distribution of mail addressed to the University, is located in the basement of the Coffman Memorial Union on the Main Campus. The Agricultural Campus post office is in the Administration Building on that campus. At the time of registration each student is assigned a post-office box in which he will receive all mail, announcements, and university communications. The mail box should be visited at least once a day. *When leaving at the close of a term, students should give the postmaster a forwarding address.*

#### OFFICIAL DAILY BULLETIN

Throughout the summer an Official Daily Bulletin is published in the *Minnesota Daily*. In addition to announcements for students and faculty, it contains programs of the various recreational activities and matters of general interest. The *Minnesota Daily* is delivered to offices and laboratories, and to the post-office box of every student each morning on which it is published. *Each student is held responsible for a knowledge of such information appearing in the official notices as may affect him.*

#### STUDENTS' HEALTH SERVICE

The Students' Health Service conducts a dispensary and infirmary during the Summer Session on the same basis as any other quarter of the year, the same staff of physicians, dentists, and nurses being on duty. Through the Students' Health Service, the University makes available to students medical care, physical examinations, health consultations, and hospitalization. General service is provided free of charge, but for services which are specialized and individual in character, such as dentistry, X ray, board and laundry in the student hospital, out-patient calls, minor surgery, etc., special fees are charged.

## HOUSING AND FOOD SERVICE

**Living Expenses**—The living expenses for students at the University are never very high, and this is true especially of the Summer Session. Good accommodations for room may be had from \$12 to \$20 per month. In addition to the cafeterias conducted on the campus by the University, several good restaurants are to be found in the immediate vicinity of the University. Further information concerning room and board may be obtained by addressing the Director of Student Housing, 202 Eddy Hall, University of Minnesota, Minneapolis 14. It is generally more satisfactory to engage accommodations after arrival than to make reservations in advance, except in the case of reservations at Comstock Hall, the Cooperative Village, and Pioneer Hall on the Main Campus, and Meredith Hall on the Agricultural Campus.

## ADMISSION AND REGISTRATION

## ADMISSION

By action of the Board of Regents on December 13, 1946 admission to the 1947 Summer Session will be on the following basis. Except for persons registered in the Graduate School or for the degrees master of education, master of laws, or an equivalent advanced degree in any college, nonresidency restrictions will apply in the 1947 Summer Session. In general, further provisions are made for:

1. Residents of Wisconsin, northern Michigan, Iowa, North Dakota, South Dakota, and Montana.
2. Former students or sons or daughters of former students of the University of Minnesota.
3. Individual cases showing most unusual promise, if recommended by suitable academic authorities.

Those not now attending or regularly admitted who believe themselves eligible for admission should write to the Office of Admissions and Records, University of Minnesota, Minneapolis 14, Minnesota, requesting a blank for application to the Summer Session. If eligible for consideration, applicants are subject to the following entrance privileges and requirements:

The courses of the Summer Session are open to all qualified high school graduates. Students with previous college work who wish to attend only for the Summer Session, and are not candidates for degrees during this Summer Session, may do so without filing credentials provided they are in good standing. Such students will be classified as special students for the Summer Session only. Anyone who expects to become a candidate for a degree at the University during either summer term must, at the time of his registration, file with the Office of Admissions and Records of the University of Minnesota an application for admission and official transcripts of credits covering high school and previous college work. Students who have had no previous college work must satisfy regular admission requirements to attend Summer Session. For Summer Session purposes, persons of maturity (generally over twenty-four years of age) whose preparation does not meet the entrance requirements may attend as adult special students subject to the approval of the dean of the college or school concerned.

The procedure for admission of Graduate students is discussed on pages 15 and 16. Students should consult the General Information Bulletin for detailed information concerning admission to the various colleges. The General Information Bulletin and designated college bulletins describing curricula offered may be obtained by inquiry addressed to the Office of Admissions and Records, University of Minnesota, Minneapolis 14.

## NONRESIDENT REGULATIONS FOR THE ACADEMIC YEAR

By action of the Board of Regents, taken because of the present educational emergency, admission of nonresidents to the regular session is restricted, subject to the following exceptions: veterans whose homes are in a defined area economically and educationally

related to Minnesota and who are in the upper 25 per cent of their high school graduating classes, or who have an average of "B" or better if they are applying for admission with advanced standing, may be considered. Nonveterans in the same area, to be considered, must be in the upper 10 per cent of their graduating class or present a "B" average if applying for admission with advanced standing. Sons and daughters of former students are also eligible for consideration. Other minor exceptions have been established covering a few individual circumstances. It is under all of these regulations that each individual application is reviewed.

## REGISTRATION

In order that the short terms may prove of maximum value, and that the work of the courses may not be interfered with by late entrants, students are urged to complete their registration, including payment of fees, on the days set aside for registration.

The regular registration days are:

For the first term Tuesday, June 17, 8:00 a.m. to 4:00 p.m.

For the second term Monday, July 28, 8:00 a.m. to 4:00 p.m.

Late registration fees are charged for the first term as follows for registration or payment of fees on:

Wednesday, June 18 .....	\$2.00
Thursday, June 19 .....	3.00
Friday, June 20 .....	4.00
Monday, June 23 .....	5.00

No registrations are allowed for the first term after Monday, June 23, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

The late fees for the second term are as follows for registration or payment of fees on:

Tuesday, July 29 .....	\$2.00
Wednesday, July 30 .....	3.00
Thursday, July 31 .....	4.00
Friday, August 1 .....	5.00

No registrations will be accepted for the second term later than Friday, August 1, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

No provision is made for allowing exemption from the late registration fee to those who are unable to reach the University during the regular registration days.

Registration for all colleges except the College of Agriculture, Forestry, and Home Economics will be in the Field House at University Avenue and Oak Street Southeast. College of Agriculture, Forestry, and Home Economics students will register at 203d Administration Building, Agricultural Campus.

## FEES

The following fees are payable each term by each full-time student at the time of registration and must be paid before registration is complete:

Tuition fee (per term) .....	\$25.80
Incidental fee† (per term) .....	6.00
	<hr/>
Total fee (per term) .....	\$31.80
General deposit .....	2.00

† An incidental fee of \$6.00 per term is charged each student for which the student receives the privileges of the Coffman Memorial Union, the Health Service, the *Minnesota Daily* including the Official Daily Bulletin, Library, Counseling Bureau, Speech Clinic, recreation, and the university post-office service.

## Forestry fees:

Dormitory and dining hall at Lake Itasca Forestry  
and Biological Station (first term) ..... 5.00

The following fees are payable each term at the time of registration by each student taking four credits or less and must be paid before registration is complete:

Part-time tuition fee (4 credits or less) (per term).....	\$15.80
Incidental fee‡ (per term) .....	6.00
<hr/>	
Total fee (per term) .....	\$21.80
General deposit .....	\$2.00

NOTE—Regular quarter fees as provided during the academic year will be charged in Medicine, Dentistry, Dental Hygiene, Law, and Nursing. In all other colleges the regular Summer Session fees as listed above will be charged.

In addition, certain courses carry a fee as indicated in the description of those courses.

Graduate students who have completed all their graduate work with the exception of their theses will be allowed to register in the Summer Session for *thesis work only* upon the payment of \$5 tuition and \$2 deposit fee.

Charges for lockers, laboratory breakage, library fines, etc., will be deducted from the \$2 deposit and the balance will be refunded by mail after the close of the term.

There is no additional fee in the Summer Session for students who live outside Minnesota.

For fees for students desiring legal time credit in the Medical School, see page 83.

For fees for students registered for clinical courses in the School of Dentistry, see page 99.

For fees for students registered for music courses, see page 35.

For fees for students registered for nursing courses, see pages 97-98.

*Refund of Fees*

Students who cancel their Summer Session registration without class attendance shall be allowed a full (100 per cent) refund of fees. Students who cancel after having attended classes shall be allowed a refund of fees on the following basis:

Length of Term	80 Per Cent Refund for Attendance	No Refund for Attendance of More Than
6 weeks	1 day to 1 week	1 week
5 weeks	1 day to 5 days	5 days
4 weeks	1 day to 4 days	4 days
3 weeks	1 day to 3 days	3 days
2 weeks	1 day to 2 days	2 days
1 week	1 day	1 day

## AUDITORS

*Fees for auditors are the same as for students registered for credit.* Permission to attend classes as auditors may be granted by the dean of the college or school with the consent of the department concerned. The procedure for registration as auditor is the same as for registration for credit except that "auditor" should be indicated on the registration sheet. It is expected that auditors will be registered in at least one course for credit, but this regulation may be waived in exceptional cases.

‡ An incidental fee of \$6.00 per term is charged each student for which the student receives the privileges of the Coffman Memorial Union, the Health Service, the *Minnesota Daily* including the Official Daily Bulletin, Library, Counseling Bureau, Speech Clinic, recreation, and the university post-office service.

## CREDIT

Credit is allowed on the following basis: One quarter credit requires not less than 10 lecture or recitation periods (2 per week for a summer term) requiring two hours of preparation each or not less than 20 periods of laboratory work requiring one-half hour of preparation each; or not less than 30 hours of laboratory work with no preparation. Courses carrying two or more units of credit require corresponding multiples of these amounts.

## AMOUNT OF WORK

A maximum of 9 credits or two 5-credit courses is considered a full program for either term. Registration for a greater number requires special permission from the Students' Work Committee or the dean of the school or college in which the student is registered.

## EXAMINATIONS

Examinations are held at the last scheduled class hour for each course.

## GRADING SYSTEM

There are four passing grades, A, B, C, and D, representing varying degrees of achievement.

The grade F (failure) indicates work of distinctly unsatisfactory quality and may be converted into a higher grade only by a repetition of the work in the course or, in exceptional cases, by examination with permission of the faculty concerned.

The grade I (incomplete) indicates that a student, for reasons satisfactory to the instructor in charge, has been unable to complete the work of the course. This grade is given only when the work already done has been of acceptable quality. Any student receiving this grade will be given an opportunity to complete the course within the first thirty days of his next quarter in residence, or in case of a student who is not in attendance during other quarters of the year, special arrangements may be made by the recorder if application is filed before the end of the summer term. A fee of \$5 is charged for each special examination.

## REGULATIONS GOVERNING GRANTING OF DEGREES

The Board of Regents will confer the degree appropriate to the course pursued subject to all the following conditions:

1. **Curriculum requirements**—Certification by the recorder of the completion of all requirements of the course of study as outlined in the college announcement, or its equivalent as determined by the faculty of the college offering the course.

2. **Recommendation of the faculty.**

3. **Residence requirement**—The student must earn at least one year's credit in residence in this University. If the term of residence is only one year, that year must be the senior year; and in any case he must spend two quarters of the senior year in residence. In addition, special residence requirements must be met in several of the schools and colleges. See individual school and college announcements.

4. **Payment or satisfactory arrangement of all financial obligations** due the University.

5. **Attendance at commencement**—All candidates for degrees are required to be present at commencement exercises provided the candidate's work is completed at the end of a quarter when such exercises are held. Commencement exercises for first term Summer Session candidates will be held Thursday, July 24, 1947, and for second term Summer Session candidates, will be held Thursday, August 28, 1947.

A student who fails to attend shall not receive his diploma until the expiration of one year, unless in the meantime he attends commencement exercises or unless excused from such attendance by the dean of the college and the president of the University.

6. **Graduation fee**—Graduate School, \$10; other schools and colleges, \$7.50.

7. **Placement Service fee**—A placement service fee of \$10, in addition to the graduation fee, is required of candidates for degrees from the Institute of Technology.

#### EXPLANATIONS

The following pages contain announcements of the courses offered in the several colleges and schools of the University. Departmental statements also indicate certain requirements as to entrance and credits. For more detailed statements of these matters, reference should be made to the Bulletin of General Information and the regular annual bulletin of the college concerned.

Following each course is a statement, in parentheses, of credits, classes of students eligible, prerequisites, days of the week, class hours, and location of the class. Thus: (3 cred.; jr., sr., grad.; prereq. 12, 13; MTWThF II; 117F.) means that course carries three credits, is open to juniors, seniors, and graduate students, has for prerequisites Courses 12 and 13, meets on Monday, Tuesday, Wednesday, Thursday, and Friday, at the second hour, in Room 117, Folwell Hall. Abbreviations for class hours and buildings are interpreted by the tables on page 5.



## GRADUATE SCHOOL

The Graduate School presents unusual opportunities for advanced study and research in many fields. It brings together in a single organization all the programs and offerings of the University at the level of advanced instruction that may lead to the higher degrees of master of arts, master of science, and doctor of philosophy.

The privileges of the Graduate School are open, upon application, to those who have received Bachelor's degrees from recognized colleges and universities and whose records demonstrate that they are adequately prepared for successful work in their chosen major fields of study. Applications are considered by the Graduate School as such and by graduate advisers in the departments in which the applicants propose to carry major work and with due consideration of the available facilities for accepting additional graduate students. In many instances applicants are required to present evidence supplementary to that contained in their official transcripts. This evidence may take the form of tests such as the Graduate Record Examination, the Miller Analogies Test, or the Ohio Psychological Examination.

Students must make application for admission at least four weeks before the opening of the Summer Session which they expect to attend in order to avoid delay and last-minute disappointment as well as possible penalty for late registration. Applicants who do not hold a degree from the University of Minnesota must present a transcript in duplicate of their undergraduate work. Applicants who hold a degree from the University of Minnesota are expected to present a certified copy of their scholastic record. Applications should be sent to the Dean of the Graduate School, University of Minnesota, Minneapolis 14, Minnesota.

### CANDIDACY FOR A DEGREE

Admission to the Graduate School does not admit a student to candidacy for a degree. Admission to such candidacy is contingent upon the ability of the student and the quality of his work in the Graduate School of the University of Minnesota. Admission to candidacy indicates a judgment by members of the graduate faculty that the student shows sufficient promise to be permitted to proceed towards a degree. Under no circumstances will a student be admitted to candidacy until he has been in residence for at least one quarter or Summer Session and until he has removed any deficiencies which may have conditioned his admission to the Graduate School.

Following the completion of from 9 to 15 graduate credits, at least 3 of which must be in the major, the student who expects to obtain a Master's degree should apply for admission to candidacy for that degree on a blank provided for the purpose. This application should be submitted as soon as a student has earned sufficient credits to be eligible to candidacy. The *application for candidacy* will be reviewed by an appropriate committee normally from the major department, division, or college. This committee will recommend to the dean, through the appropriate Graduate Group Committee, the acceptance or rejection of the application for candidacy. The dean or the reviewing committee may require any evidence which is thought pertinent to the consideration of the application.

### MASTER'S DEGREE, PLAN A

The *course work* for the Master's degree according to Plan A may be completed in four separate summer terms of six weeks each. In this case, the candidate will be expected to register for thesis and to carry *in absentia* thesis work to complete the equivalent of

three quarters. All requirements for the Master's degree under Plan A must be completed within six years after the first registration, except in social work where the time limit is eight years.

The Master's degree under Plan A may be earned by qualified students who complete a minimum of 27 quarter credits, 18 in the major and 9 in the minor, who meet special requirements such as that of a reading knowledge of a foreign language, and who present a satisfactory thesis and pass the required final written and oral examinations.

Theses of Summer Session students must be completed and a minimum of four copies registered in the Graduate School office at least four weeks before the end of the term in which they take the degree (first term: Thursday, June 26, 1947; second term: Thursday, July 31, 1947).

#### MASTER'S DEGREE, PLAN B

The requirements under this plan in matters of admission, residence, transfer of credits from other institutions, and language requirements follow Plan A. Plan B differs in substituting for the thesis a heavier course requirement which, if met in Summer Sessions, means more than the minimum four sessions of course work possible under Plan A. All requirements for the Master's degree under Plan B must be completed within seven years after the first registration, except in social work where the time limit is nine years.

Under Plan B candidates for the Master's degree must complete, with an average of B, 45 quarter credits in courses listed in the Graduate School Bulletin. At least 21 credits shall be in a single field of concentration. At least 18 credits shall be in related fields, and it is understood that this work shall include at least *two* fields. The Master's degree under Plan B is, as compared with Plan A, somewhat less a test of research interest and is more adapted to those who, for example, as teachers or school administrators, will profit by a broader range of knowledge in the fields with which they are professionally concerned. In a word, the requirements under Plan B are meant to forward the student's advanced education, not on a different level but for a somewhat different purpose than in the case of the requirements for Plan A. The transfer from one plan to the other may be made only with approval of the adviser and the appropriate graduate faculty committee.

Under Plan B, at least 9 quarter credits either in the field of concentration or in related fields must be in advanced courses, seminars, or independent work under faculty supervision and requiring the preparation of written reports representing the quality but not the range of a Master's thesis. Courses which offer an opportunity to meet this 9-hour requirement are marked in this bulletin with an asterisk (\*).

A full statement of the requirements for advanced degrees may be found in the Graduate School bulletins. Opportunity for a training program in vocational diagnosis and counseling for rehabilitation workers is also offered. (See special bulletin.)

Students must register in the Graduate School if they desire their work to be counted for an advanced degree.

All requests for information concerning graduate work, including admission to the Graduate School, should be addressed to the Dean of the Graduate School.

# COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

## GENERAL INFORMATION

For general information, for the requirements for admission as regular or as unclassified students, for general rules and regulations, and for the requirements for degrees in the different curricula offered by the college, students should consult one of the administrative officers or the General Information Bulletin and the complete bulletin of the College of Science, Literature, and the Arts. (See also page 10 of this bulletin.)

Courses announced in the bulletin as open to "juniors and seniors" or to "juniors, seniors, and graduates" are called "Senior College Courses." They are open to sophomores under certain conditions. See the complete bulletin of the college or consult one of the administrative officers.

Some of the numbers given in the statement of prerequisites for courses in this bulletin refer to courses listed in the bulletin of the college.

Some of the courses scheduled in this Summer Session Bulletin by the School of Business Administration, the Medical School, the Institute of Technology, and the College of Agriculture, Forestry, and Home Economics are open to students of the College of Science, Literature, and the Arts under the same conditions that prevail during the regular college year. For information, consult one of the administrative officers of the College of Science, Literature, and the Arts.

An *asterisk* (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 16.)

## AMERICAN STUDIES

### FIRST TERM

- 21su. Humanities in the United States I. Regionalism, nationalism, and internationalism, in literature, history, philosophy, and the related arts. (Same as Hum. 21.) (3 cred.; all; no prereq.; MTWThF I; 213NH.) Ar.
- 116su. American Agricultural History. (Same as Hist. 116asu.) (3 cred.; jr., sr., grad.; no prereq.; MTWThF I; 221Bu.) Mr. Edwards.
- 131su. History of American Science. (Same as Hist. 131asu.) (3 cred.; jr., sr., grad.; no prereq.; MTWThF III; 204NH.) Mr. Guerlac.
- 161su. Scientific Thought in American Literature to the Civil War. (Same as Eng. 161su.) (3 cred.; jr., sr., grad.; no prereq.; MTWThF II; 204F.) Mr. Hornberger.
- 191su. Evolutionism and American Thought. (Same as Phil. 191Asu.) (Cred. and hr. ar.; prereq. consent of instructor.) Mr. Otto.

### SECOND TERM

- 22su. Humanities in the United States II. Individualism, democracy, and minorities in a democracy, in literature, history, philosophy, and the related arts. (Same as Hum. 22.) (3 cred.; all; no prereq.; MTWThF I; 213NH.) Miss Turpie.

## ANTHROPOLOGY

### FIRST TERM

- 41su. Introduction to Anthropology. The human races. Relation between physical type and culture. A survey of the prehistoric cultures and physical types. Culture areas and their characteristics. The diffusion and development of culture. (3 cred.; soph., jr., sr.; no prereq.; MTWThF VII; 6WeH.) Mr. Watson.

- 119su.\* 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.; MTWThF II; 6WeH.) Ar.
- 122su.\* Problems in Anthropology. Individually directed readings. (Cred. ar.; jr., sr., grad.; prereq. permission of instructor; ar.; 104WeH.) Mr. Watson.
- 129su.\* Primitive Economics. Varied systems of making a living in preliterate groups. Economy of hunting and fishing tribes, primitive agriculturalists, 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.; MTWThF III; 6WeH.) Mr. Watson.

## SECOND TERM

- 42su. The Growth of Cultures. 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 arts, beliefs, and institutions of primitive communities as observed in recent times. (3 cred.; soph., jr., sr.; no prereq.; MTWThF VII; 6WeH.) Mr. Watson.
- 123su.\* Problems in Anthropology. Individually directed readings. (Cred. ar.; jr., sr., grad.; prereq. permission of instructor; ar.; 104WeH.) Mr. Watson.
- 165su.\* 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.; MTWThF III; 6WeH.) Mr. Watson.

## SUMMER SESSION

- 140su.\* Field Trip in Archeology. Excavations of prehistoric mounds and village sites in the state of Minnesota. (1 to 8 cred.; jr., sr., grad.; prereq. male students only; permission of instructor required.) Mr. Wilford.

## ASTRONOMY

## FIRST TERM

- 11su. Descriptive Astronomy. (5 cred.; all; no prereq.; MTWF III-IV and one evening a week for observation; 133Ph.) Mr. Luyten.
- 13su. Stellar and Practical Astronomy. Deals primarily with the observational aspect of astronomy, with the constellations and individual stars. Two lectures a week and as much observing as weather permits. (3 cred.; all; no prereq.; MW 7:30 to 9:00 p.m., approximately the latter half of the time being used in observation; 133Ph.) Mr. Luyten.
- 140su. Least Squares. (3 cred.; prereq. 51 or 11, and at least Math. 51; ar.) Mr. Luyten.

## SECOND TERM

- 13su. Stellar and Practical Astronomy. (See first term.) (3 cred.; all; no prereq.; MW 7:30 to 9 p.m., approximately the latter half of the time being used in observation; 133Ph.) Mr. Luyten.
- 20su.† Celestial Navigation. Fundamentals and astronomical background of navigation. Practice in the actual determination of position on the sea and in the air, using the methods now in use in Army and Navy. (5 cred.; all; no prereq.; MTWF VI-VII and one evening a week for observations; 358Ph. If there is sufficient demand, this course may also be taught at another hour.) Mr. Luyten.

† A fee of \$1 is charged for this course.

## BOTANY

## FIRST TERM

- 4su.‡ 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. (5 cred.; all; no prereq.; lect. MTWThF I; 06Bo; lab. MTWThF II-III; 4, 5Bo.) Ar.
- 6su. Field Botany. (Given only at the Biological Station Itasca Park for Foresters.)
- 197su.‡‡ Problems. Advanced work in some specialized field of botany. (1-5 cred.; jr., sr.; prereq. consent of instructor; ar.; ar.) Ar.

## SECOND TERM

- 5su.‡ General Botany. (See 4su first term for description.) (5 cred.; prereq. 4su or equiv.; lect. MTWThF I; 06Bo; lab. MTWThF II-III; 4, 5Bo.) Ar.
- 198su.‡‡ Problems. Advanced work in some specialized field of botany. (1-5 cred.; jr., sr.; prereq. consent of instructor; ar.; ar.) Ar.

For additional courses see Itasca Park Biological Station, page 78.

## CLASSICS

## FIRST TERM

*Courses for Which No Knowledge of Greek or Latin Is Required*

- 42-43su. Greek Mythology. Lectures, textbook work, and illustrative readings, supplemented by occasional stereopticon views. The origin and interpretation of the myth; its relation to literature, art, and religion. (3 cred.; soph., jr., sr.; no prereq.; MTWThF IV; 114F.) Mr. Heller.

## GREEK

- 171su.\* Independent Reading Course. (3 cred.; jr., sr., grad.; prereq. consent of instructor; MTWThF II; 110F.) Mr. Heller.

## LATIN

- 141su.\* Problems in the Teaching of High School Latin. Readings; discussions, and reports concerning problems in methods, textbooks, illustrative material, bibliography. (3 cred.; jr., sr., grad.; prereq. any two courses numbered between 50 and 100; MTWThF III; 110F.) Ar.
- 171su.\* Independent Reading Course. (3 cred.; jr., sr., grad.; prereq. consent of instructor; MTWThF II; 110F.) Mr. Heller.

## SECOND TERM

*Courses for Which No Knowledge of Greek or Latin Is Required*

- 31su. 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. (3 cred.; soph., jr., sr.; no prereq.; MTWThF IV; 114F.) Ar.

‡ A fee of \$2.25 is charged for this course.

‡‡ A fee of \$1.50 is charged for this course.

## GREEK

172su.\* Independent Reading Course. (Same as 171su first term but different authors will be read and discussed.) (3 cred.; jr., sr., grad.; prereq. consent of instructor; MTWThF II; 110F.) Ar.

## LATIN

172su.\* Independent Reading Course. (Same as 171su first term but different authors will be read and discussed.) (3 cred.; jr., sr., grad.; prereq. consent of instructor; MTWThF II; 110F.) Ar.

## COMMUNICATION

See General Studies, page 24.

## ECONOMICS

For courses in Economics, see School of Business Administration offerings listed on page 125.

## ENGLISH

## FIRST TERM

## LITERATURE

- 1-2-3su. Freshman Literature. These three courses carry university credit for the literature part of Eng. A-B-C respectively. Readings in English and American literature selected as exemplifying the statement that "literature is an interpretation of life." See below for prerequisites and schedule.
- 1su. Freshman Literature. *The Drama of American Life*. (3 cred.; all; prereq. placement test; MTWThF I; 6F.) Ar.
- 2su. Freshman Literature. *The Larger World*. (3 cred.; all; prereq. Eng. A, or Eng. 1, or grade of A or B in Comp. 4 or Communication 1 with recommendation of previous instructor; MTWThF III; 124F.) Ar.
- 3su. Freshman Literature. *The Significance of the Human Drama*. (3 cred.; all; prereq. Eng. B, or Eng. 2, or grade of A or B in Comp. 5 or Communication 2 with recommendation of previous instructor; MTWThF IV; 8F.) Ar.
- 21su. Introduction to Literature. This course carries university credit for the first quarter of Eng. 21-22-23. Marlowe, Spenser, Bacon, Browne, Milton, and Bunyan. (6 cred.; all; prereq. Eng. A-B-C or Comp. 4-5-6 or Communication 1-2-3 or exemption from requirement; MTWThF II and IV; 322F.) Mr. Hessler.
- 37su. Twentieth-Century Literature. This course carries university credit for the first quarter of Eng. 37-38-39. The literature of opinion, biography, travel, etc., with some reading in the short story. This course, as a general introduction to the intelligent reading of literature, is intended for all students in all colleges, and not particularly for those meaning to specialize in English. (3 cred.; all; prereq. Eng. A-B-C or Comp. 4-5-6 or Communication 1-2-3 or exemption from requirement; MTWThF III; 322F.) Mr. Cronin.
- 55su. Shakespeare. *A Midsummer Night's Dream, The Merchant of Venice, Much Ado About Nothing, Twelfth Night, and The Tempest*. Assignment of other comedies for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq. §; MTWThF I; 204F.) Mr. Buckley.

§ English A-B-C, or Composition 4-5-6 and 6 additional credits, or Communication 1-2-3 and 6 additional credits, or 10 credits in English 21-22-23.

- 56su. Shakespeare. *Henry IV*, parts 1 and 2, *Julius Caesar*, *Hamlet*, and *Macbeth*. Assignment of other historical plays for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq.§; MTWThF II; 3F.) Miss Christie.
- 62su. Milton. (3 cred.; jr., sr.; prereq. 21-22 or 55-56; MTWThF IV; 316F.) Ar.
- 73su. American Literature. This course carries university credit for the first quarter of Eng. 73-74. (3 cred.; jr., sr.; prereq.§; MTWThF II; 110NH.) Mr. Herbert Brown.
- 75su. Chaucer. Reading of selections from the *Canterbury Tales*, with introduction dealing with the grammar and literary forms of fourteenth-century English. (3 cred.; jr., sr.; prereq.§; MTWThF III; 115F.) Mr. Dunn.
- 100su. Old English. The relation to modern English is particularly stressed. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF I; 205F.) Mr. Clark.
- 109su. Wordsworth and Coleridge. The critical and philosophical ideas and poetry of Wordsworth and Coleridge, with emphasis on their relations to the general European romantic movement. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF IV; 311½F.) Mr. Wellek.
- 114su. The Midwest in Literature. (3 cred.; jr., sr., grad.; prereq. 73-74 or Hist. 20-21-22; MTWThF IV; 11F.) Mr. Hornberger.
- 129su. Modern Drama. (3 cred.; jr., sr., grad.; prereq. 55-56 or 126-127; MTWThF IV; 115F.) Mr. Hillhouse.
- 132su. The Technique of the Twentieth-Century American Novel. (3 cred.; sr., grad., but not open to students who have taken any quarter of 123-124-125; prereq. 6 cred. above 50 and permission of instructor; MTWThF III; 212F.) Mr. Beach.
- 153su. Seventeenth-Century Lyrists. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF II; 115F.) Mr. Dunn.
- 154su. The American Novel Prior to the Civil War. (3 cred.; jr., sr., grad.; prereq. 73-74 or 52-53; MTWThF I; 302F.) Mr. Herbert Brown.
- 161su. Scientific Thought in American Literature up to the Civil War. (3 cred.; jr., sr., grad.; prereq. 73-74; MTWThF II; 204F.) Mr. Hornberger.
- 165su. The Historical Study of Modern English. An introductory course for all who major in English, both in S.L.A. and in Education. (3 cred.; jr., sr., grad., but not open to students who have taken 100; prereq. 6 cred. above 50; MTWThF I; 303F.) Mr. Allen.
- 174su. American English. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF III; 303F.) Mr. Allen.
- 254su. Seminar: Studies in Emerson. (3 cred.; grad. with permission of instructor; ar.; ar.) Ar.
- 271su. Seminar in Eighteenth-Century Literature. The main critical and philosophical ideas of the age, with intensive analysis of individual poems. (3 cred.; grad. with permission of instructor, but registration limited to 15 students; MTWThF III; 205F.) Mr. Wellek.

## COMPOSITION

Preparatory Composition. This course is required of all freshmen whose standings in the tests required of entering freshmen are very low. For such freshmen it is prerequisite for all college courses offered by the Departments of English and Speech, and the School of Journalism. Registrations for this course should be made in 402 Administration Building. There is a special fee of \$7.50 for the course. (No cred.; MTWThF I, II, III; ar.) Ar.

§ English A-B-C, or Composition 4-5-6 and 6 additional credits, or Communication 1-2-3 and 6 additional credits, or 10 credits in English 21-22-23.

- 4su. Freshman Composition. Practical training in the art of writing; the principles of structure, and analysis of specimens of good prose. This course carries university credit for the first quarter of Composition 4-5-6. (3 cred.; all; prereq. placement test; Sec. 1, MTWThF I, 306F, ar.; Sec. 2, MTWThF II, 316F, ar.; Sec. 3, MTWThF III, 311F, ar.; Sec. 4, MTWThF IV, 321F, ar.)
- 5su. Freshman Composition. A continuation of Composition 4. This course carries university credit for the second quarter of Composition 4-5-6. (3 cred.; all; prereq. Comp. 4 or Communication 1; Sec. 1, MTWThF I, 8F, ar.; Sec. 2, MTWThF II, 311½F, ar.; Sec. 3, MTWThF III, 114F, ar.; Sec. 4, MTWThF IV, 6F, ar.)
- 6su. Freshman Composition. A continuation of Composition 5. This course carries university credit for the third quarter of Composition 4-5-6. (3 cred.; all; prereq. Composition 4-5 or Communication 1-2; Sec. 1, MTWThF I, 115F, ar.; Sec. 2, MTWThF II, 205F, ar.; Sec. 3, MTWThF III, 6F, ar.; Sec. 4, MTWThF IV, 9F, ar.)
- 27su. Advanced Writing. The writing of essays with emphasis on structure and organization. Instruction largely in individual conference. (3 cred.; all; prereq. Eng. A-B-C or Comp. 4-5-6 or Communication 1-2-3 or exemption from requirement; Sec. 1, MTWThF I, 316F, ar.; Sec. 2, MTWThF II, 304F, Mr. Buckley; Sec. 3, MTWThF III, 10F, Miss Christie; Sec. 4, MTWThF IV, 10F, Mr. Cronin.)
- 28su. Advanced Writing. Informal writing, involving description and narration. Instruction largely in individual conference. (3 cred.; all; prereq. Eng. A-B-C or Comp. 4-5-6 or Communication 1-2-3 or exemption from requirement; Sec. 1, MTWThF I, 304F, Mr. Martin; Sec. 2, MTWThF II, 303F, ar.)
- 101su. Seminar in Writing. This course carries university credit for the first quarter of Composition 101-102-103. Instruction largely in individual conference. (3 cred.; sr., grad., but registration limited to 15 students; prereq. permission of instructor and for undergraduates 6 cred. above 50 in composition; MTWThF II, 302F.) Mr. Martin.

## SECOND TERM

## LITERATURE

- 1su. Freshman Literature. (See 1su first term.) (3 cred.; all; prereq. placement test; MTWThF IV; 316F.) Ar.
- 2su. Freshman Literature. (See 2su first term.) (3 cred.; all; prereq. Eng. A, or Eng. 1, or grade of A or B in Comp. 4 or Communication 1 with recommendation of previous instructor; MTWThF III; 9F.) Ar.
- 3su. Freshman Literature. (See 3su first term.) (3 cred.; all; prereq. Eng. B, or Eng. 2, or grade of A or B in Comp. 5 or Communication 2 with recommendation of previous instructor; MTWThF I; 304F.) Ar.
- 38su. Twentieth-Century Literature. This course carries university credit for the second quarter of English 37-38-39. Poetry and Drama. This course, as a general introduction to the intelligent reading of literature, is intended for all students in all colleges, and not particularly for those meaning to specialize in English. (3 cred.; all; prereq. Eng. A-B-C, or Comp. 4-5-6, or Communication 1-2-3, or exemption from requirement; MTWThF III; 303F.) Mr. O'Connor.
- 55su. Shakespeare. (See 55su first term.) (3 cred.; jr., sr.; prereq.§; MTWThF I; 303F.) Ar.
- 56su. Shakespeare. (See 56su first term.) (3 cred.; jr., sr.; prereq.§; MTWThF II; 305F.) Mr. Hulme.
- 74su. American Literature. This course carries university credit for the second quarter of Eng. 73-74. (3 cred.; jr., sr.; prereq.§; MTWThF IV; 301F.) Mr. Taylor.

§ English A-B-C, or Composition 4-5-6 and 6 additional credits, or Communication 1-2-3 and 6 additional credits, or 10 credits in English 21-22-23.



- 113su. The American Short Story. (3 cred.; jr., sr., grad.; prereq. 73-74; MTWThF IV; 10F.) Miss Turpie.
- 126su. Restoration and Eighteenth-Century Drama. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF III; 306F.) Mr. Stallman.
- 150su. Victorian Poetry. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF I; 305F.) Mr. Stallman.
- 155su. The American Novel. This course carries university credit for the second quarter of Eng. 154-155. (3 cred.; jr., sr., grad.; prereq. 73-74; MTWThF II; 303F.) Mr. Taylor.
- 181su. Contemporary American Literary Criticism. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF I; 302F.) Mr. O'Connor.

## COMPOSITION

- Preparatory Composition. (See Preparatory Composition, first term.) (No cred.; MTWThF I; ar.) Ar.
- 4su. Freshman Composition. (See 4su first term.) (3 cred.; all; prereq. placement test; Sec. 1, MTWThF I, 9F, ar.; Sec. 2, MTWThF II, 10F, ar.; Sec. 3, MTWThF III, 207F, ar.; Sec. 4, MTWThF IV, 11F, ar.)
- 5su. Freshman Composition. (See 5su first term.) (3 cred.; all; prereq. Comp. 4; Sec. 1, MTWThF I, 8F, ar.; Sec. 2, MTWThF II, 213F, ar.; Sec. 3, MTWThF III, 10F, ar.; Sec. 4, MTWThF IV, 8F, ar.)
- 6su. Freshman Composition. (See 6su first term.) (3 cred.; all; prereq. Comp. 4-5; Sec. 1, MTWThF I, 101NH, ar.; Sec. 2, MTWThF II, 311½F, ar.; Sec. 3, MTWThF III, 308F, ar.; Sec. 4, MTWThF IV, 6F, ar.)
- 27su. Advanced Writing. (See 27su first term.) (3 cred.; all; prereq. Eng. A-B-C, or Comp. 4-5-6, or Communication 1-2-3, or exemption from requirement; MTWThF II; 321F.) Ar.
- 28su. Advanced Writing. (See 28su first term.) (3 cred.; all; prereq. Eng. A-B-C, or Comp. 4-5-6, or Communication 1-2-3, or exemption from requirement; Sec. 1, MTWThF I, 6F, ar.; Sec. 2, MTWThF II, 304F, Mrs. Phelan; Sec. 3, MTWThF III, 101F, Mr. Hulme; Sec. 4, MTWThF IV, 302F, ar.)
- 102su. Seminar in Writing. This course carries university credit for the second quarter of Composition 101-102-103. (3 cred.; sr., grad., but registration limited to 15 students; prereq. permission of instructor and for undergraduates 6 cred. in Senior College courses in composition; TF III, IV, T V; 304F.) Mrs. Phelan.

## FAMILY LIFE

See General Studies, page 24.

## FINE ARTS

## FIRST TERM

- 1su. Introduction to Modern Art. Introductory course in the history and appreciation of modern architecture, sculpture and painting in Europe and America, with a critical analysis of the various schools, the theories and the principal works of contemporary art. In the study of the various styles, emphasis will be placed upon art facilities available in the cities of Minneapolis and St. Paul, such as important architectural monuments, art collections in the Minneapolis Institute of Arts, Walker Art Center, and the St. Paul Gallery of Art. These, together with the current exhibitions and materials available in the University Gallery, are the working laboratories of the course. Material offered in this course corresponds to that of Fine Arts 1f given during the academic year. (3 cred.; no prereq.; MTWThF II and 1 hr. ar.; 2J.) Ar.

- 109su. Art in America. A course in American art for advanced students of history, art, and literature. A study of painting, sculpture, and architecture from the colonial period through the present day. Emphasis will be placed on the socio-economic conditions which have shaped the artistic styles of the United States. (3 cred.; prereq. 1-2-3 or consent of instructor; MTWThF IV and 1 hr. ar.; 2J.) Ar.
- 121su. French Painting of the Nineteenth and Twentieth Centuries. A course dealing with the development of French painting from the French Revolution to the present day. (3 cred.; prereq. 1-2-3 or consent of instructor; MTWThF III; 2J.) Ar.
- 122su. English Painting. A course in English painting from Holbein to the present day. (3 cred.; prereq. 1-2-3 or consent of instructor; MTWThF VI; 2J.) Ar.

## SECOND TERM

- 2su. Introduction to Medieval and Ancient Art. A course in the general history of painting, sculpture, and architecture from the prehistoric times through the Egyptian, Greek, and Roman styles to the end of the Romanesque and Gothic periods of Medieval Europe. Material corresponds to that offered in Fine Arts 2w during the academic year. (3 cred.; no prereq.; MTWThF II and 1 hr. ar.; 2J.) Ar.
- 156su. Renaissance Art in Northern Europe. The development of painting and sculpture in Flanders, Northern France, and Germany from the Van Eycks to Albrecht Dürer and Hans Holbein. (3 cred.; prereq. 1-2-3 or consent of instructor; MTWThF IV and 1 hr. ar.; 2J.) Ar.

## GENERAL STUDIES

## FIRST TERM

## COMMUNICATION

- 1su. Communication. Experience in the arts of effective speaking and writing as well as discriminating reading and listening; and a study of agencies and methods for communicating ideas. This course is regarded as an equivalent of Composition 4-5-6 in satisfying any requirements of the University. (Formerly Communication 4-5-6.) (3 cred.; all; prereq. placement test; corresponds to G.E.D. test No. 1; MTWThF II; 8F.) Mr. Ames.
- 2su. Communication. A continuation of Communication 1. (3 cred.; all; prereq. Communication 1; MTWThF II; 10F.) Mr. Bryan.

## FAMILY LIFE

- 1su. 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. (Formerly Marriage A.) (3 cred.; no prereq.; Sec. 1, MTWThF II, 6F, Mrs. Aldrich; Sec. 2, MTWThF III, 5F, Mrs. Aldrich)
- 14su.‡ Nutrition and Food Management. Scientific principles of nutrition; food purchasing; food preparation and service. The class is limited to 20 students and will afford practical laboratory experience. (5 cred.; no prereq.; MTWThF VI-VII; 5UHS.) Mrs. Tucker.

## HUMANITIES

- 4su. Humanities in the Modern World. An introduction to the study of the humanities since World War I. The authors studied include Freud, Lenin, Shaw, Capek, Malraux, Thomas Mann, T. S. Eliot, and others. The background topics include civiliza-

‡ A fee of \$3 is charged for this course.

tion between two wars, the impact of psychoanalysis, creative evolution, communism versus fascism, etc. (3 cred.; all; no prereq.; Sec. 1, MTWThF II, 111NH, Mr. Swanson; Sec. 2, MTWThF III, 111NH, Mr. Cronin; Sec. 3, MTWThF IV, 213NH, Mr. Ames; Sec. 4, MTWThF VI, JAud, Mr. Castell.)

- 11su. The Greek Heritage. 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 us in present-day civilization. The heroic age of legend—"Men like gods"; 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 Homer, Plato, the dramatists, and others. (3 cred.; all; no prereq.; MTWThF III; 213NH.) Mr. Clark.
- 21su. Humanities in the United States I. The growth and the interrelation of nationalism, regionalism, and internationalism in American social thought, literature, and the fine arts, against a background of history. (Formerly Humanities 10.) (3 cred.; all; no prereq.; MTWThF I; 213NH.) Ar.
- 131su. Humanities Proseminar. Topic for course: The Place of the Humanities in an Age of Science. (Formerly Humanities 97-98-99.) (2 cred.; sr., grad.; no prereq.; MTWF IV; 304F.) Mr. Castell.

#### PERSONAL ORIENTATION

- 1su. How to Study. Practical assistance to the student in developing efficient study habits, organizing materials, training the memory, preparing for examinations and improving the speed and comprehension of reading. (2 cred.; all; prereq. permission of counselor in 98F; Sec. 1, MTWThF I, 106NH, Miss Power; Sec. 2, MTWThF VI, 106NH, Miss Power.)

#### SOCIAL SCIENCE

- 1su. Introduction to Social Science. A study of the great social issues of our time and analysis of the proposed solutions. Information and insights from every source—sociological, economic, political, geographic, historical—are utilized to assist the student in making judgments necessary for effective citizenship. The entire course (12 cred.) but not any part of it, will satisfy the social science requirement for admission to the Senior College of Science, Literature, and the Arts and the College of Education. (3 cred.; all; no prereq.; MTWThF III; 207NH.) Mr. Kampelman.
- 2su. Introduction to Social Science. Continuation of Soc. Sci. 1su. (3 cred.; all; prereq. Soc. Sci. 1; MTWThF V; 6F.) Mr. Kampelman.

#### SECOND TERM

#### COMMUNICATION

- 2su. Communication. Continuation of Communication 1su. (3 cred.; all; prereq. Communication 1; MTWThF II; 8F.) Mr. Ames.
- 3su. Communication. Continuation of Communication 1-2. (3 cred.; all; prereq. Communication 1-2; MTWThF II; 302F.) Mr. Bryan.

#### FAMILY LIFE

- 1su. Preparation for Marriage. (See 1su first term.) (3 cred.; all; no prereq.; Sec. 1, MTWThF II, 6F, Mrs. Aldrich; Sec. 2, MTWThF IV, 5F, Mrs. Aldrich.)
- 25su. Child Development and Adjustment. Physical growth and care; development of basic habits, skills, attitudes, and adjustments; the development of self-control and the provision of good environment for child growth. (3 cred.; all; no prereq.; MTWThF IV; 166Ph.) Mr. Harris.

## HUMANITIES

- 4su. Humanities in the Modern World. (See 4su first term.) (3 cred.; all; no prereq.; Sec. 1, MTWThF II, 9F, Mr. Livingston; Sec. 2, MTWThF III, 6F, Mr. Ames; Sec. 3, MTWThF IV, 213NH, Miss Shaw; Sec. 4, MTWThF V, 133Ph, Mr. Swanson.)
- 22su. Humanities in the United States II. The growth and interrelation of individualism and democracy, with particular attention to the status of minorities. (3 cred.; all; no prereq.; MTWThF I; 213NH.) Miss Turpie.

## PERSONAL ORIENTATION

- 1su. How to Study. (See 1su first term.) (2 cred.; all; no prereq.; Sec. 1, MTWThF I, 106NH, Miss Power; Sec. 2, MTWThF VI, 106NH, Miss Power.)

## SOCIAL SCIENCE

- 2su. Introduction to Social Science. (See 1su first term.) (3 cred.; all; no prereq.; MTWThF III; 8F.) Mr. Kyllonen.
- 3su. Introduction to Social Science. Continuation of Soc. Sci. 1. (3 cred.; all; prereq. Soc. Sci. 1; MTWThF V; 6F.) Mr. Sewrey.

## GEOGRAPHY

## FIRST TERM

- 41su.† Geography of Commercial Production. A study of commodities which enter into world trade and the geographic basis for their production. (5 cred.; all; no prereq.; MTWThF V-VI; 103Bu.) Mr. Burgy.
- 53su. Historical Geography of North America. A study of the geography of past decades of American history. (3 cred.; jr., sr.; prereq. 11 or 15 cred. in history; MTWThF I; 103Bu.) Mr. Brown.
- 101su.\* Geography of Europe. A detailed consideration of the present economic activities and future possibilities of the principal geographic regions of Europe. (3 cred.; jr., sr., grad.; prereq. 11 or permission of instructor; MTWThF IV; 103Bu.) Mr. Dicken.
- 102su.\* Trade Routes and Trade Centers. A study of the world's major trade routes, the commodities which move over them, and the centers where such commodities are assembled and from which distribution occurs. (3 cred.; jr., sr., grad.; prereq. 41; MTWThF III; 103Bu.) Mr. Dicken.
- 110su.\* Geography of South America. The environmental basis for population distribution and economic activities in selected type areas. (3 cred.; jr., sr., grad.; prereq. 11 or permission of instructor; MTWThF II; 103Bu.) Mr. Brown.

## SECOND TERM

- 11su.† Human Geography. A study of the factors of the physical environment and their effect on human activities. (5 cred.; all; no prereq.; MTWThF I-II; 103Bu.) Mr. Davis.
- 71su. Geography of North America. A consideration of environmental conditions and their limiting effect on economic activities in the major geographic regions of the United States and Canada. (3 cred.; jr., sr.; prereq. 11; MTWThF III; 103Bu.) Mr. Weaver.

† Enrolment limited to 60. Registrations must be tallied at Geography desk.

125su.\* Geography of the Polar Areas. A study of high latitude areas and of recent developments in these regions. (3 cred.; jr., sr., grad.; prereq. 11 or permission of instructor; MTWThF IV; 103Bu.) Mr. Weaver.

## GEOLOGY AND MINERALOGY

### FIRST TERM

1su. General Geology. (Geologic Processes and Their Results.) A study of the varied aspects of our natural environment with special reference to the influence of geologic processes and structures on landscape development. The interpretation of natural scenery produced by glaciers, streams, ground water, geysers, oceans, volcanoes, etc. Lectures supplemented by laboratory work with minerals and rocks. Also several field excursions. (5 cred.; all; no prereq.; MTWThF I-II; 210P.) Mr. Thiel.

100su. Field Work in Northern Minnesota—July 15 to 30, approximately. Students interested in this field trip should consult the department. (3 cred.; jr., sr.; prereq. 105.) Mr. Gruner.

150su.§ Field Geology (Black Hills)—June 15 to July 15, approximately. (Cred. ar.; jr., sr., grad.; prereq. 125.) Mr. Gruner.

170su. Geologic Problems. (3 cred.; jr., sr., grad.; prereq. permission of major adviser; ar.) Mr. Thiel.

NOTE—For further information, see instructors.

In addition to the courses definitely offered, advanced and graduate students may register for Geology 241 or 243 and do their work under the supervision of the instructors in residence.

### SECOND TERM

2su. Historical Geology. A study of the probable conditions of earth origin, the antiquity of the earth and the evolution of the continents and of the life that inhabited the seas and the land areas of past ages. (5 cred.; all; prereq. 1 or 8; MTWThF III-IV; 210P.) Mr. Swain.

107su. Geologic Problems. (3 cred.; jr., sr., grad.; prereq. permission of major adviser; ar.) Mr. Swain.

## GERMAN

### FIRST TERM

1su. Beginning A. (5 cred.; all; no prereq.; Sec. 1, MTWThF I-II, 209½F, Miss Wangsness; Sec. 2, MTWThF I-II, 321F, Miss Barre; Sec. 3, MTWThF III-IV, 209F, Mr. O'Connell.)

2su. Beginning B. (5 cred.; all; prereq. German 1 or one year of high school German; Sec. 1, MTWThF I-II, 209F, Mr. Ramras; Sec. 2, MTWThF I-II, 212F, Mr. Westermeier.)

3su. Beginning C. (5 cred.; all; prereq. German 2 or two years of high school German; Sec. 1, MTWThF I-II, 207F, Mr. Pfeiffer; Sec. 2, MTWThF I-II, 213F, Mr. Kyler.)

4su. Intermediate. (5 cred.; all; prereq. German 3 or three years of high school German; Sec. 1, MTWThF I-II, 9F, Mr. Prottengeier; Sec. 2, MTWThF I-II, 5F, ar.)

125su.\* Luther and the German Language. (3 cred.; sr., grad.; prereq. 68 and 11 cred. above 59 or equiv.; ar.; ar.) Mr. Downs.

163su.\* Thomas Mann. (3 cred.; sr., grad.; prereq. 68 and 11 cred. above 59 or equivalent; ar.; ar.) Mr. Pfeiffer.

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

## SECOND TERM

- 2su. Beginning B. (See 2su. first term.) (Sec. 1, MTWThF I-II, 209½F, Mr. Prottengeier; Sec. 2, MTWThF I-II, 209F, Miss Hager; Sec. 3, MTWThF III-IV, 209½F, Mr. Ramras.)
- 3su. Beginning C. (See 3su. first term.) Sec. 1, MTWThF I-II, 207F, Mr. Holske; Sec. 2, MTWThF I-II, 5F, Mr. Gloor.)
- 4su. Intermediate. (See 4su. first term.) (Sec. 1, MTWThF I-II, 204F, Mr. Genschmer; Sec. 2, MTWThF I-II, 11F, ar.)
- 259su. Direction of Graduate Work. (Cred. ar.; grad.; ar.; ar.) Ar.

## HISTORY

For other courses see Program in American Studies and Russia and the Far East.

## FIRST TERM

- 1su. Civilization of the Modern World. Part I of freshman survey. (3 cred.; all; no prereq.; MTWThF I; 111Bu.) Mr. Athearn.
- 3su. Civilization of the Modern World. Part III of freshman survey. (3 cred.; all; no prereq.; MTWThF III; 111Bu.) Mr. Peterson.
- 4su. English History: Conquest and Settlement, the Feudal Age, Foreshadowings of Limited Monarchy and Popular Government. (3 cred.; no prereq.; MTWThF II; 209NH.) Mr. Morton.
- 20su. American History to 1844. Part I of soph. survey. (3 cred.; soph., jr., sr.; no prereq.; MTWThF IV; 111Bu.) Mr. Reynolds.
- 22su. American History, 1878 to Present. Part III of soph. survey. (3 cred.; soph., jr., sr.; no prereq.; MTWThF III; 112Bu.) Mr. Sharp.
- 53asu. Renaissance and Reformation: The Age of Dante and Petrarch. (3 cred.; jr., sr.; MTWThF II; 112Bu.) Miss Thompson.
- 57asu. See Russia and the Far East, 107su, page 46.
- 58asu. See Russia and the Far East, 108su, page 46.
- 60su. Continental Europe: Napoleon III, the first "modern" dictator; making the kingdom of Italy and the Second German Reich. (3 cred.; jr., sr.; MTWThF III; 211Bu.) Mr. Anderson.
- 65su. Europe in the Twentieth Century. Part I. (3 cred.; jr., sr.; no prereq.; MTWThF I; 112Bu.) Mr. Peterson.
- 72su. English Constitutional History in the Last Two Centuries. (3 cred.; open to pre-legal 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.; MTWThF IV; 112Bu.) Miss Thompson.
- 73su. Modern England, 1815-1914. (3 cred.; jr., sr.; MTWThF IV; 211Bu.) Mr. Morton.
- 83asu. American Agricultural History (History of American agriculture with reference to the European background). (3 cred.; soph., jr., sr.; MTWThF I; 221Bu.) Mr. Edwards.
- 86su. American Colonies in the 17th Century. (3 cred.; jr., sr.; MTWThF II; 211Bu.) Mrs. Tyler.
- 86asu. Social and Intellectual History of the U. S. (3 cred.; jr., sr.; MTWThF I; 216NH.) Mrs. Tyler.
- 90su. American West: the Colonial Frontier. (3 cred.; jr., sr.; MTWThF IV; 221Bu.) Mr. Osgood.
- 104asu. Medieval European History. (See 53asu.)
- 107su. Twentieth Century Europe. (See 65su.)
- 108su. Continental Europe. (See 60su.)
- 108su. See Russia and the Far East, 107su, page 46.

- 109su. See *Russia and the Far East*, 107su and 108su, page 46.  
 116asu. *American Agricultural History*. (See 83asu.)  
 131asu. *History of American Science*. (3 cred.; jr., sr., grad.; MTWThF III, 204NH.)  
 Mr. Guerlac.  
 156su. *Foundations of Modern Science in the 17th and 18th Centuries*. (3 cred.; sr.,  
 grad.; ar.; ar.) Mr. Guerlac.  
 156su.\* See *Russia and the Far East*, 156su, page 46.  
 183asu.\* *Topics Course in American Agricultural History*. (3 cred.; grad.; MTWThF  
 III; 110NH.) Mr. Edwards.  
 190su.\* *Selected Readings in History of the West, Colonial Period*. (3 cred.; sr., grad.;  
 ar.; ar.) Mr. Osgood.  
 201-202-203su. *Historical Bibliography and Criticism*. (3 cred.; grad.; required of candi-  
 dates for advanced degrees in history who have not had equivalent elsewhere; TTH  
 VII-VIII; 339Lib.) Mr. Steefel.

## SECOND TERM

- 2su. *Civilization of the Modern World. Part II of freshman survey*. (3 cred.; all; no  
 prereq.; MTWThF I; 111Bu.) Ar.  
 21su. *American History, 1844-1877. Part II of sophomore survey*. (3 cred.; soph., jr., sr.;  
 no prereq.; MTWThF III; 111Bu.) Mr. Saloutus.  
 55su. *Medieval European History, Part III*. (3 cred.; jr., sr.; no prereq.; MTWThF II;  
 111Bu.) Mr. Krey.  
 55asu. *Renaissance and Reformation, Part II*. (3 cred.; jr., sr.; no prereq.; MTWThF  
 IV; 111Bu.) Mr. Krey.  
 58su. *Early Modern European History (French Revolution and Napoleonic Empire)*.  
 (3 cred.; jr., sr.; MTWThF III; 112Bu.) Mr. Steefel.  
 58asu. See *Russia and the Far East*, 108su, page 46.  
 67su. *Europe in the Twentieth Century. Part III*. (3 cred.; jr., sr.; no prereq.; MTWThF  
 II; 112Bu.) Mr. Deutsch.  
 68su. *American History since 1900*. (3 cred.; soph., jr., sr.; no prereq.; MTWThF III;  
 213NH.) Mr. Saloutus.  
 70su. *English Constitutional History: the Medieval Period*. (3 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 all jrs. and srs.; MTWThF I; 112Bu.) Mr. Mitton.  
 93asu. *Latin-American History: Part I*. (3 cred.; jr., sr.; no prereq.; MTWThF I;  
 216NH.) Mr. Beatty.  
 95su. *American Diplomatic History: Part III*. (3 cred.; jr., sr.; no prereq.; MTWThF  
 IV; 112Bu.) Mr. Beatty.  
 106su. *Medieval European History*. (See 55su.)  
 106asu. *Renaissance and Reformation*. (See 55asu.)  
 108su. See *Russia and the Far East*, 108su, page 46.  
 109su. *Europe in the Twentieth Century*. (See 67su.)  
 109su. *Continental Europe*. (See 58su.)  
 127su. *American Diplomatic History*. (See 95su.)  
 136su. *Latin-American History*. (See 93asu.)  
 143su. *American Folklore*. (3 cred.; jr., sr., grad.; MTWThF II; 213NH.) Mr. Dorson.  
 157su.\* See *Russia and the Far East*, 157su, page 47.  
 224su.\* *Seminar in Modern European History. Reading knowledge of French or German*.  
 (3 cred.; grad.; ar.) Mr. Deutsch.

## HUMANITIES

See General Studies, page 24.

## JAPANESE

See Linguistics and Comparative Philology, page 33.

## SCHOOL OF JOURNALISM

*Fees*—A general fee of \$1 a term is required of any student registered for one or more journalism courses. This \$1 fee entitles students to use of typewriters in the type-writing and reporting laboratories and provides certain necessary supplies for their use in class.

## FIRST TERM

- 13su. Introduction to Reporting. Lectures, practice, and conferences. Practical instruction in news gathering, news writing, and news analysis. The study of news sources and the problems of the reporter. Reports on aspects of leading American newspapers and on selected books dealing with the contemporary newspaper. Enrolment is limited to twenty-eight students in a section. (3 cred.; soph., jr., sr., with C average; prereq. Eng. A-B-C or Comp. 4-5-6 or Com. 1-2-3 or exemption from English requirement; Sec. 1, MTWThF I, 212MurH, Mr. Jensen; Sec. 2, MTWThF II, 212MurH, Mr. Haapa; Sec. 3, MTWThF III, 212MurH, Mr. Janson; Sec. 4, MTWThF VI, 212MurH, Mr. Hage.)
- 13su. Introduction to Reporting (for minors). Open only to students in colleges of the University other than Science, Literature, and the Arts who have permission to take minor work under the cooperative programs of the School of Journalism and these colleges. Enrolment is limited to thirty students in a section. (3 cred.; soph., jr., sr., with C average; prereq. Eng. A-B-C or Comp. 4-5-6 or Com. 1-2-3 or Rhetoric 1-2-3 or exemption from English requirement; Sec. 1, MTWThF I, 311MurH, Mr. Haapa; Sec. 2, MTWThF IV, 311MurH, Mr. Sabine.)
- 15su. Newspaper Reporting. Advanced reporting problems, both in news gathering and news writing. Extensive practice assignments. Writing the feature story. Specialized news sources. Enrolment is limited to twenty-eight students in a section. (3 cred.; soph., jr., sr.; prereq. C average in 13-14 and in all work, or consent of instructor, and Comp. 27-28, which may be taken concurrently; Sec. 1, MTWThF IV, 210MurH, Ar.; Sec. 2, MTWThF II, 210MurH, Ar.)
- 51su.‡ News Editing. Instruction and practice in editing news copy, proofreading, headline writing, and news evaluation. News display and makeup. Enrolment is limited to fifteen students in a section. (3 cred.; jr., sr.; prereq. 14 and Senior College standing; lect. MW IV, 308MurH, Mr. Emery; lab. Sec. 1, TF IV, V, 206MurH, Mr. Janson; lab. Sec. 2, TF IV, V, 320MurH, Mr. Emery; lab. Sec. 3, MW VI, VII, 206MurH, Mr. Janson; lab. Sec. 4, TTh VIII, IX, 206MurH, Mr. Janson.)
- 55su.‡‡ Advertising and Newspaper Typography. The study of traditional and modern type designs. Principles of typographical arrangement of advertisements and newspaper pages. Lectures and laboratory work designed to teach the student how to work with type, how to prepare layouts, and the use of headline forms, copy blocks, illustrations, borders, type devices, and other layout and makeup patterns. The course is planned for supervisors of school publications as well as for undergraduate majors in journalism. Enrolment is limited to fifteen students in a section. (3 cred.; prereq. for journalism majors, Senior College standing; for minors, 13 and 41; lect. MW VI, 308MurH, Mr. Wilson; lab. Sec. 1, TTh VI, VII, 315MurH, Mr. Wilson; lab. Sec. 2, MW VIII, IX, 315MurH; lab. Sec. 3, TTh VIII, IX, 315MurH, Mr. Wilson; lab. Sec. 4, MW I, II, 315MurH, Mr. Wilson.)

‡ A fee of \$2 is charged for this course in addition to the general fee.

‡‡ A fee of \$3 is charged for this course in addition to the general fee.



- 67su. Radio News Writing. Processing news for radio broadcast; radio news style; news commentary, special events, interviews, news dramatization and other special radio news forms. Students aid in the preparation of news broadcasts for KUOM, the University radio station. (3 cred.; jr., sr.; prereq. 15; lect. MWF III, 302MurH, Mr. Jensen; lab. TTh III-IV, 202MurH, Mr. Jensen.)
- 73su. Magazine Writing and Editing. Lectures and conferences. The writing of non-fiction articles for periodicals, general and specialized, and for newspapers; instruction in magazine editing. Subjects and materials; analysis of manuscript markets; study of magazine policies and practices. Students with special training and aptitude may devote some attention to editing problems of book publishers. Enrolment limited to twenty students in a section. (3 cred.; jr., sr.; prereq. 15, or consent of instructor; Sec. 1, MTWThF IV, 302MurH, Mr. Kildow; Sec. 2, MTWThF I, 302MurH, Mr. Hage.)
- 82su. Supervision of School Publications. Practical consideration of editorial, business management, and production problems facing supervisors of high school, junior college, and teachers college newspapers, magazines, yearbooks. (3 cred.; jr., sr.; prereq. consent of instructor; MTWThF III, 311MurH.) Mr. Kildow.
- 109su. History of Journalism. This course deals with the early history of the press: the forerunners of the newspaper on the European continent and in England and the later development of the newspaper in the seventeenth and eighteenth centuries in England and America. (3 cred.; jr., sr., grad.; prereq. 13 and Senior College standing; MTWThF II; 105MurH.) Mr. Emery.
- 111su. International Communication and the Foreign Press. The channels of international communication and the network of international newsgathering agencies. The problems created by the nationalistic control of cables, wireless, and radio facilities and the struggle for domination of communication facilities in peacetime and in wartime. An examination is made of foreign news and the methods by which it is obtained, transmitted and processed for American readers. Techniques, problems, and responsibilities of the foreign correspondent. The press in European, Far Eastern, and Latin-American countries. The factors affecting the content and flow of news from those countries. (3 cred.; jr., sr., grad.; no prereq.; MTWThF II; 311MurH.) Mr. Nixon.
- 121su. The Newspaper in a Dynamic Society. The political environment of the newspaper, past and present, and the economic climate in which it lives. Industrialization, urbanism, and changes in the social structure as they affect the newspaper. Patterns of newspaper ownership—private, cooperative, subsidized—and their evaluation. The newspaper of the future. (3 cred.; jr., sr., grad.; prereq. 15, or consent of instructor; MTWThF II; 308MurH.) Mr. Gerald.
- 130su. Communication Agencies and Public Opinion. The agencies of communication and their role in the opinion-forming process. Propaganda techniques and the strategies of governments (in peace and war), political parties, pressure groups and other organized bodies that seek to control mass behavior. Democratic procedures in appealing to public opinion contrasted with authoritarian methods of enforcing acceptance. A discussion of public relations. Formal and informal censorships. (3 cred.; jr., sr., grad.; no prereq.; MTWThF III; 105MurH.) Mr. Nixon.
- 140su. Interpretation of Contemporary Affairs. The interpretation in the communication media of important state, national, and international problems. Editorials and interpretative articles are written after careful initial study of significant and timely developments in political, economic, and social areas. Structure of editorials and "background" articles; editorial policy and direction; editorial page content. (3 cred.; sr., grad.; prereq. 51 and 10 cred. in the social studies or consent of major adviser in journalism; MTWThF III; 308MurH.) Mr. Gerald.

210su. Research in Newspaper Problems. Individual research in either historical or contemporary phases of the newspaper and magazine. (2-3 cred.; grad.; prereq. consent of instructor; ar.; 405MurH.) Mr. Nafziger.

## SECOND TERM

14su. Newspaper Reporting. Advanced reporting problems, both in news gathering and news writing. Enrolment is limited to twenty-eight students in a section. (3 cred.; soph., jr., sr.; prereq. C average in 13 and in all work, or consent of instructor; Sec. 1, MTWThF I, 212MurH, Mr. Emery; Sec. 2, MTWThF II, 212MurH, Mr. Haapa; Sec. 3, MTWThF III, 212MurH, Mr. Janson; Sec. 4, MTWThF VI, 212MurH, Mr. Janson.)

55su.‡ Advertising and Newspaper Typography. For description of course, see 55su, first term. Enrolment limited to fifteen students in a section. (3 cred.; prereq. see 55su, first term; lect. MW VI, 311MurH, Mr. Barnhart; lab. Sec. 1, TTh VI, VII, 315MurH, Mr. Barnhart; lab. Sec. 2, MW VII, VIII, 315MurH, Mr. Barnhart.)

68su. Problems in Radio Writing. The radio audience and its responses; planning and writing scripts in advertising, dramatic, public affairs, and other radio fields; training in fundamental broadcasting problems; program planning; radio station organization. (3 cred.; jr., sr.; prereq. 15 and consent of instructor; MTWThF II; 302MurH.) Mr. Charnley.

73su. Magazine Writing and Editing. For description of course, see 73su, first term. Enrolment limited to twenty-five students. (3 cred.; jr., sr.; prereq. 15, or consent of instructor; MTWThF I; 302MurH.) Mr. Sabine.

94su. Newspaper Advertising. The role of newspaper advertising; the newspaper's relations with the retail advertiser, national representative, and advertising agency; organization of the advertising department; rate structure; development of copy and layout, with particular emphasis on retail advertising. Selling advertising. Individual criticism is given on all advertising copy written in the laboratory. (3 cred.; jr., sr.; prereq. 51 and 55, or 41, 55, and consent of instructor; MTWThF III; 311MurH.) Mr. Barnhart.

101su. The Reporting of Public Affairs. Training in reporting court trials, city, county, state, federal administrative and legislative agencies; politics, business and labor. (3 cred.; jr., sr., grad.; prereq. 51; MTWThF III; 308MurH.) Mr. Nafziger.

110su. History of Journalism. The course begins with the rise of the popular press in the 1830's and deals generally with the emergence of the modern newspaper. Stress is placed on the major social influences that have shaped the pattern of the press. The contributions of leading publishers and editors are discussed. (3 cred.; jr., sr., grad.; prereq. 13 and Senior College standing; MTWThF III; 105MurH.) Mr. Emery.

112su. Current Newspaper Problems. The function of the press in modern society; its relation to government, labor, agriculture, industry, education, the law, foreign affairs, entertainment, and sports; the internal structure of the press; problems relating to ownership and operation. (3 cred.; sr., grad.; prereq. 51; MTWThF I; 105MurH.) Mr. Wiggins.

141su. Interpretation of Contemporary Affairs. For description of course, see 140su. (3 cred.; sr., grad.; prereq. 140; MTWThF IV; 311MurH.) Mr. Charnley.

177su. 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. Local, state, and federal regulations affecting news gathering and news dissemination. The problems of international freedom of the press. (3 cred.; jr., sr., grad.; prereq. 51 and consent of instructor; MTWThF II; 311MurH.) Mr. Gerald.

‡ A fee of \$3 is charged for this course in addition to the general fee.

- 210su. Research in Newspaper Problems. For description of course see 210su first term. (2-3 cred.; prereq., consent of instructor; ar.; 405MurH.) Mr. Gerald.

## LINGUISTICS AND COMPARATIVE PHILOLOGY

## FIRST TERM

## JAPANESE

- 1su. Beginning Japanese. Introduction to conversational Japanese using romazi. (4 cred.; all; no prereq.; TWThF I-II; 17F.) Mrs. Syro-Boyarsky.

## RUSSIAN

- 1su. Beginning Russian. Special attention to the needs of those who desire a reading knowledge of modern Russian. (4 cred.; all; no prereq.; TWThF I-II; 311F.) Mr. Reichardt.
- 102su. Dostoevski and Tolstoy. Lectures on their most significant works with consideration of their European background. No knowledge of Russian required. (3 cred.; jr., sr., grad.; prereq. 8 cred. in literature; MTWThF III; 209½F.) Mr. Reichardt.

## SECOND TERM

## JAPANESE

- 2su. Beginning Japanese. Reading of Japanese texts; instruction in writing of characters, use of Chinese-Japanese character dictionary, and further conversation. (4 cred.; all; prereq. 1; TWThF I-II; 316F.) Mrs. Syro-Boyarsky.

## RUSSIAN

- 2su. Intermediate Russian. Continuation of Russian 1. (4 cred.; all; prereq. 1; TWThF I-II; 311F.) Miss Niemi.
- 81su. Reading of Non-literary Russian Texts. Reading material selected according to the needs of the students. (3 cred.; jr., sr.; prereq. 51-52-53 or consent of instructor; TWF III-IV; 207NH.) Miss Niemi.

## MATHEMATICS

## FIRST TERM

- 1su. Higher Algebra. A collegiate treatment of the topics of elementary algebra for those who have had one year of elementary algebra. (5 cred.; all; prereq. 1 yr. of elementary algebra in high school; open for credit to any student offering not more than one-half year of high school higher algebra for entrance credit; Sec. 1, MTWThF I-II, 104F, Mr. Thompson; Sec. 2, MTWThF VI-VII, 104F, ar.)
- 6su. Trigonometry. A treatment of logarithms and plane trigonometry. (5 cred.; all; prereq. plane geometry and either Course 1 or high school higher algebra; MTWThF I-II; 102F.) Mr. Graves.
- 7su. College Algebra. Selected topics in algebra commencing with quadratic equations and extending through the theory of equations and determinants, omitting logarithms. (5 cred.; all; prereq. 1 or high school higher algebra; MTWThF III-IV; 104F.) Mr. Colson.
- 8su. Commerce Algebra. College algebra including logarithms. (5 cred.; primarily for prebusiness students but open also to others; prereq. 1, or high school higher algebra; Sec. 1, MTWThF I-II, 105F, Mr. Lindgren; Sec. 2, MTWThF VI-VII, 102F, ar.)

- 15su. Elementary Mathematical Analysis I. This, together with Course 16, provides 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. (5 cred.; all; prereq. 1 or high school higher algebra; Sec. 1, MTWThF III-IV, 105F, Mr. Crawford; Sec. 2, MTWThF VI-VII, 105F, ar.)
- 20su. Mathematics of Investment. The principles and applications of the theory of interest, annuities, amortization, valuation of bonds, sinking funds, and depreciation. (5 cred.; all; prereq. 8, or 6 and 7; MTWThF I-II; JAud.) Mr. Donsker.
- 30su. Analytic Geometry. (5 cred.; all; prereq. 6 and 7 or 6 and 8 or 15 and 16; MTWThF III-IV; 102F.) Mr. Jensen.
- 50su. Calculus I: Differential Calculus. (5 cred.; jr., sr.; prereq. 30; MTWThF I-II; 101F.) Miss Carlson.
- 106su. Differential Equations. A first course in differential equations with emphasis on their applications in physics and geometry. (3 cred.; jr., sr., grad.; prereq. 51; MTWThF I; 124F.) Mr. Hatfield.
- 107su. Advanced Calculus I. (3 cred.; jr., sr., grad.; prereq. Intermediate Calculus and either some acquaintance with solid analytic geometry or consent of instructor; MTWThF II; 124F.) Mr. Wegner.
- 109su.\* Theory of Numbers. A study of the fundamental properties of integers, simple continued fractions, theory of number congruences and Diophantine equations. (3 cred.; jr., sr., grad.; prereq. 51; MTWThF III; 101F.) Mr. Hatfield.
- 136su.\* Solid Analytic Geometry. (3 cred.; jr., sr., grad.; prereq. 50 or registration in 50; MTWThF IV; 124F.) Mr. Wegner.
- 143su.\* Fourier, Legendre, and Bessel Series. Formal properties, convergence, and applications of Fourier series and other series of a similar character. (3 cred.; jr., sr., grad.; prereq. 51; MTWThF IV; 101F.) Mr. Cameron.
- 248su.\* Reading and Research. (Cred. ar.; grad.; prereq. consent of instructor; ar.; ar.) Mr. Cameron.

## SECOND TERM

- 1su. Higher Algebra. (See 1su, first term.) (MTWThF I-II; 212F.) Mr. Thompson.
- 6su. Trigonometry. (See 6su, first term.) (MTWThF I-II; 105F.) Mr. Boekelheide.
- 7su. College Algebra. (See 7su, first term.) (MTWThF I-II; 101F.) Mr. Lindgren.
- 16su. Elementary Mathematical Analysis II. (See 15su, first term.) (Sec. 1, MTWThF III-IV, 105F, Mr. Crawford; Sec. 2, MTWThF VI-VII, 105F, ar.)
- 20su. Mathematics of Investment. (See 20su, first term.) (Sec. 1, MTWThF I-II, 104F, Mr. Graves; Sec. 2, MTWThF VI-VII, 104F, ar.)
- 51su. Calculus II: Integral Calculus. (5 cred.; jr., sr.; prereq. 50; MTWThF I-II; 102F.) Miss Gibbens.
- 108su. Advanced Calculus II. (3 cred.; jr., sr., grad.; prereq. 107; MTWThF II; 124F.) Mr. Wegner.
- 118su.\* Vector Analysis. (3 cred.; jr., sr., grad.; prereq. 51; MTWThF III; 104F.) Mr. Olmsted.
- 119su.\* Theory of Matrices. (3 cred.; jr., sr., grad.; prereq. 51; MTWThF IV; 104F.) Mr. Wegner.

## MUSIC‡

## FIRST TERM

- 1su. Ear Training. (2 cred.; for non-music majors. Primarily for child welfare and elementary school teachers; no prereq.; MTWThF I; 3Mu.) Ar.

‡ Students taking Music 10-27 pay only the special fees indicated for these courses plus deposit. Such students may take other courses for additional tuition \$15.80, incidental fee \$6, and special course fees.

- 1Tsu. Music Theory. A correlated course including ear training, sight singing, melodic and harmonic dictation, keyboard and written harmony. (3 cred.; prereq. consent of instructor; MTWThF II-III; 3Mu.) Ar.
- 4Tsu. Music Theory. Continuation of the correlated course including ear training, sight singing, melodic and harmonic dictation, keyboard and written harmony. (4 cred.; prereq. 3T or consent of instructor; MTWThF II, III; 103Mu.) Mr. Aliferis.
- 11su. Piano. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Miss Kendall, Mr. Stephens, Mr. Rymer.
- 12su. Voice. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Miss Hull, Mr. Schuessler.
- 13su. Violin. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Peterson.
- 14-26su. Instruments of the Orchestra. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Minneapolis Symphony Artist Teachers.
- 27su. Organ. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Jennings.
- 31su. Music Appreciation. Cultivation of better understanding of music heard today. The course is designed for students with a general interest in music. (2 cred.; all; no prereq.; MTWThF III; 202WeH.) Ar.
- 36su. History of Music. (2 cred.; all; no prereq.; MTWThF III; 4Mu.) Mr. Ferguson.
- 44su. University Chorus. (1 cred.; all; prereq. consent of instructor; MTWTh IV; 5NMA.) Mr. Aliferis.
- 49su. Gregorian Chant. A practical presentation of plain song through performance as well as study. (3 cred.; all; no prereq.; MTWThF VI; 103Mu.) Rev. Keller.
- 49bsu. Advanced Gregorian Chant. Continuation of Music 49. (3 cred.; prereq. Mu. 49 or consent of instructor; MTWThF VII; 103Mu.) Rev. Keller.
- 70-71-72su. Normal Piano. (2 cred.; jr., sr.; prereq. 2 years of piano; MTWThF IV; 3Mu.) Miss Kendall.
- 73-74-75su. Advanced Harmony. (2 cred.; jr., sr.; prereq. Mu 6T or equiv.; MTWThF I; 103Mu.) Ar.
- 76su. Form and Analysis. (3 cred.; jr., sr.; prereq. 4T; MTWThF VIII; 4Mu.) Mr. Stephens.
- 77-78-79su. Composition-Orchestration. (2 cred.; prereq. 4T-5T-6T; 7-8; ar.; 102Mu.) Mr. Ferguson.
- 83-84-85su. Advanced Composition. (2 cred.; prereq. 77-78-79; ar.; 102Mu.) Mr. Ferguson.
- 101su. American Music. (3 cred.; sr., grad.; prereq. consent of instructor; MTWThF V; 103Mu.) Ar.
- 200-201-202su. Basis of Musical Expression. (3 cred.; grad.; MWTh VII-VIII; 104Mu.) Mr. Ferguson.
- 205-206-207su. Composition in Larger Forms. (3 cred.; grad.; ar.; 102Mu.) Mr. Ferguson.
- 209-210-211su. Advanced Topics in Musical Analysis. (3 cred.; grad.; MTW V-VI; 104Mu.) Mr. Oberg.
- 212su. Special Problems in Music. (3 to 9 cred.; grad.; prereq. 202 or 211; ar.; ar.) Mr. Oberg and others.

## SECOND TERM

- 2Tsu. Music Theory. A correlated course including ear training, sight singing, melodic and harmonic dictation, keyboard and written harmony. (3 cred.; prereq. 1T or consent of instructor; MTWThF II-III; 3Mu.) Ar.
- 5Tsu. Music Theory. (4 cred.; prereq. Mu. 4T or consent of instructor; MTWThF II-III; 103Mu.) Mr. Aliferis.

- 9su. Layman's Music Course. A course primarily for amateur music lovers which is non-technical and is aimed to assist the layman to understand and appreciate music heard in the concert hall. Fee \$7.50. (2 cred.; all; no prereq.; MWF IV-V; August 11-29; MuAud.) Madame Stokowski.
- 10su. Piano Master Class. A lecture-demonstration course in the fundamentals of piano playing including a discussion of piano literature and of the applied techniques of the pianist. Fee \$25. (2 cred.; open to anyone having a knowledge of piano or consent of department; MWF 11-III; August 11-29; MuAud.) Madame Stokowski.
- 11su. Piano. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Lindsay, Mr. Rymer, Mr. Stephens.
- 12su. Voice. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Schuessler.
- 13su. Violin. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Peterson.
- 14-26su. Instruments of the Orchestra. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Minneapolis Symphony Artist Teachers.
- 27su. Organ. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Berryman.
- 32su. Music Appreciation. A continuation of Mu. 31—Opera. (2 cred.; all; no prereq.; MTWThF I; 202WeH.) Ar.
- 45su. University Chorus. (1 cred.; all; prereq. consent of instructor; MTWTh IV; 5NMA.) Mr. Aliferis.
- 73-74-75su. Advanced Harmony. (2 cred.; jr., sr.; prereq. Mu. 6T or consent of instructor; MTWTh I; 103Mu.) Ar.
- 212su. Special Problems in Music. (3 to 9 cred.; grad.; prereq. 202 or 211; ar.; ar.) Mr. Oberg.

## PERSONAL ORIENTATION

See General Studies, page 25.

## PHILOSOPHY

### FIRST TERM

- 1su. Problems of Philosophy. Introduction to the subject; the main fields of investigation; permanent problems; principal methods and schools of philosophy; historical and contemporary views. (3 cred.; some fr., soph., jr., sr.; no prereq.; MTWThF I; 301F.) Mr. Sellars.
- 2su. Logic. A study of the difference between logical and fallacious reasoning; types of fallacies; the rules of a good definition; syllogisms; what constitutes proof; hypothesis; generalization; probability; evaluation. (3 cred.; some fr., soph., jr., sr.; no prereq.; MTWThF II; 213NH.) Mr. Cerf.
- 3su. Ethics. Problems of life treated in terms of (1) contemporary social, political, and economic forces and (2) the character of the individual. The psychological and philosophical foundations of morality; the reconstruction of morality; the history of morals and ethical thought. (3 cred.; some fr., soph., jr., sr.; no prereq.; MTWThF III; 301F.) Mr. Swanson.
- 50su. History of Philosophy (Ancient). (3 cred.; jr., sr.; no prereq.; MTWThF III; 216NH.) Mr. Sellars.
- 63su. Principles of Mature Thinking. From infantile to adult intelligence. A study of language, meaning, understanding, reasoning, and the ways of knowing. The functions of logic and experience. Critique of infantilism in thought and conduct. Applications to problems of philosophy and education. (3 cred.; jr., sr.; no prereq.; MTWThF IV; 305F.) Mr. Feigl.

- 114su. American Philosophy from Puritanism to Pragmatism. A study of Puritanism; the Revolutionary period, transcendentalism, evolutionism, idealism, and pragmatism. (3 cred.; jr., sr., grad.; prereq. 6 cred.; MTWThF II; 301F.) Mr. Otto.
- 115su.\* Contemporary Philosophy. A survey of present-day supernaturalisms, idealisms, naturalisms, and positivisms, with special emphasis upon Bergson, Dewey, Santayana, Whitehead, Russell, and existentialism. (3 cred.; jr., sr., grad.; prereq. 6 cred.; MTWThF IV; 303F.) Mr. Cerf.
- 153su.\* Philosophy of Science. An attempt to provide a clear understanding of the meaning, methods, and implications of modern science through an 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. (3 cred.; jr., sr., grad.; prereq. Phil. 2, Logic; MTWThF III; 302F.) Mr. Feigl.
- 191su.\* Seminar. Research Problems in Philosophy. (Cred. and hr. ar.; open only to properly qualified students upon consultation with instructor.) Mr. Feigl and others.
- 191Asu.\* Seminar. Evolutionism in American Thought. (Cred. ar.; MTWThF IV; 306F; open only to qualified students upon consultation with instructor.) Mr. Otto.

## SECOND TERM

- 1su. Problems of Philosophy. Introduction to the subject; the main fields of investigation; permanent problems; principal methods and schools of philosophy; historical and contemporary views. (3 cred.; some fr., soph., jr., sr.; no prereq.; MTWThF I; 301F.) Mr. Conger.
- 2su. Logic. A study of the difference between logical and fallacious reasoning; types of fallacies; the rules of a good definition; syllogisms; what constitutes proof; hypothesis; generalization; probability; evaluation. (3 cred.; some fr., soph., jr., sr.; no prereq.; MTWThF III; 301F.) Mr. Holmer.
- 3su. Ethics. Problems of life treated in terms of (1) contemporary social, political, and economic forces, and (2) the character of the individual. The psychological and philosophical foundations of morality; the reconstruction of morality; the history of morals and ethical thought. (3 cred.; some fr., soph., jr., sr.; no prereq.; MTWThF II; 301F.) Mr. Wiggins.
- 52su. History of Philosophy (Modern). (3 cred.; jr., sr.; no prereq.; MTWThF III; 216NH.) Miss Shaw.
- 70su. Modern Philosophies of Social Reform—from the French Revolution to 1848. Social criticism in the period of rising industrialism. A consideration of the philosophical bases of liberalism, utopian socialism, and democracy. (3 cred.; jr., sr.; no prereq.; MTWThF I; 306F.) Mr. Wiggins.
- 170su.\* 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.; MTWThF IV; 306F.) Mr. Holmer.
- 181su.\* Psychology of Religion. Current interpretations of religious experience and behavior, according to various psychologies. (3 cred.; jr., sr., grad.; prereq. 6 cred.; MTWThF II; 205F.) Mr. Conger.
- 192su.\* Seminar. Research Problems in Philosophy. (Cred. and hr. ar.; open only to properly qualified students upon consultation with instructor.) Mr. Conger and others.

## PHYSICS

## FIRST TERM

- 1-2-3su. Introduction to Physical Science, Part I. Lectures and experimental demonstrations. (4½ cred.; all; prereq. high school algebra and plane geometry; lect. MWThF VI-VII, T VI; 166Ph.) Mr. Kruglak.
- 1a-2a-3asu.† Introduction to Physical Science, Part I. Laboratory included. Fulfills group requirements in S.L.A. (6 cred.; all; prereq. high school algebra and plane geometry; lect. MWThF VI-VII, T VI; 166Ph; lab. Sec. 1, TTh I-II, S II-III; Sec. 2, TThF VIII-IX; 153Ph.) Mr. Kruglak.
- 4su.‡ General Physics, Part I. (Primarily for premedical students.) Mechanics. Lab. (one 2-hour period) included. (2½ cred.; all; prereq. completion of Math. 15-16, or with permission of the department chairman, Math. 6 and either Math. 7 or 8; lect. and quiz MTWThF III, 166Ph; lab. M V-VI, VIII-IX, W I-II, V-VI, VIII-IX, Th I-II, V-VI, F I-II, 153Ph.) Mr. Kruglak.
- 6su.‡‡ General Physics. (Primarily for premedical students.) Electricity. Lab. included. (5 cred.; all; prereq. 4 or equivalent; lect. and quiz MTWThF I-II, 133Ph; lab. Sec. 1, MW V-VI; Sec. II, MW VII-VIII; Sec. 3, TTh VII-VIII, 231Ph.) Mr. Fossum.
- 7su.‡‡ General Physics, Part I. (Primarily for students in the Institute of Technology and those majoring in physics, mathematics, or chemistry.) Mechanics. Lab. (one 2-hour period) included. (2½ cred.; all; prereq. registration in calculus; lect. and quiz Sec. 1, MTWThF I; 150Ph, Mr. Ney; Sec. 2, MTWThF IV, 150Ph, Mr. Oppenheimer; Sec. 3, MTWThF VII, 150Ph, Mr. Ney; lab. M I-II, III-IV, V-VI, VIII-IX; W I-II, V-VI, VIII-IX; Th III-IV, V-VI, F I-II, III-IV, 153Ph.)
- 9su.‡‡ General Physics, Part I. (Primarily for students in the Institute of Technology and those majoring in physics, mathematics, or chemistry.) Optics and acoustics. Lab. (one 2-hour period) included. (2½ cred.; all; prereq. 7 or equiv.; lect. and quiz Sec. 1, MTWThF III, 150Ph, Mr. Weinberg; Sec. 2, MTWThF VI, 150Ph, Mr. Sleator; lab. T V-VI, VII-VIII, W I-II, VII-VIII, Th I-II, III-IV, VII-VIII, F I-II, 342Ph.)
- 73su. Intermediate Thermodynamics. Part I. (1½ cred.; all except Mech. Eng.; prereq. Phys. 7-8-9 and differential equations; lect. MWF III; 145Ph.) Mr. Ney.
- 111su.\* Modern Physics. Lectures and readings on selected topics in contemporary fields of research. (3 cred.; jr., sr., grad.; prereq. a general course in physics, Math. 51; MTWThF I and 1 hr. ar.; 145Ph.) Mr. Oppenheimer.
- 208su. Theory of Relativity. (3 cred.; grad.; prereq. Physics 193 or course in electrodynamics or permission of instructor; MTWThF I; 143Ph.) Mr. Weinberg.

## SECOND TERM

- 1-2-3su. Introduction to Physical Science, Part II. Continuation of Physics 1-2-3su, Part I, first term. (4½ cred.; lect. MWThF VI-VII, T VI; 166Ph.) Mr. Lofgren.

† A fee of \$3 per term is charged for this course.

‡‡ A fee of \$1 per term is charged for this course.

‡‡‡ A fee of \$2 per term is charged for this course.



- 1a-2a-3asu.‡ Introduction to Physical Science, Part II. Lab. included. Continuation of Physics 1a-2a-3asu, Part I, first term. (6 cred.; lect. MWThF VI-VII, T VI; 166Ph; lab. Sec. 1, TTh I-II, S II-III; lab. Sec. 2, TThF VIII-IX, 153Ph.) Mr. Lofgren.
- 4su.‡‡ General Physics, Part II. Continuation of Physics 4su, Part I, first term. (2½ cred.; lect. and quiz MTWThF III, 166Ph; lab. M V-VI, VIII-IX; W I-II, V-VI, VIII-IX; Th I-II, V-VI; F I-II, 153Ph.) Mr. Schmitt.
- 7su.‡‡ General Physics, Part II. Continuation of Physics 7, Part I, first term. (2½ cred.; lect. and quiz Sec. 1, MTWThF I, 150Ph, Mr. Ney; Sec. 2, MTWThF IV, 150Ph, Mr. Lofgren; Sec. 3, MTWThF VII, 150Ph, Mr. Wall; lab. M I-II, III-IV, V-VI, VIII-IX; W I-II, V-VI, VIII-IX; Th III-IV, V-VI, F I-II, III-IV; 153Ph.)
- 9su.‡‡ General Physics, Part II. Continuation of Physics 9, Part I, first term. (2½ cred.; lect. and quiz Sec. 1, MTWThF III, 150Ph, Mr. Valasek; Sec. 2, MTWThF VI; 150Ph, Mr. Wall; lab. T V-VI; W I-II, VII-VIII; Th I-II, III-IV, VII-VIII; F I-II; 342Ph.)
- 73su. Intermediate Thermodynamics, Part II. (Continuation of Physics 73, Part I, first term.) (1½ cred.; lect. MWF III; 145Ph.) Mr. Ney.
- 110su.\*‡‡‡ Modern Experimental Physics. (3 cred.; jr., sr., grad.; prereq. Phys. 144 or equiv.; TThF VI-IX; 49Ph.) Mr. Schmitt.
- 134su.\*‡‡‡ Experimental Optics. Measurements of indices of refraction, wave lengths, intensities, absorption, optical activity, focal lengths, and aberrations of lenses. (3 cred.; jr., sr., grad.; prereq. a general course in physics; lab. MWF VI-IX; 352Ph.) Mr. Valasek.
- 136su.\*‡‡‡ Spectrum Analysis. Experiments with the spectrograph. Analysis of spectra. (3 cred.; jr., sr., grad.; prereq. a general course in physics; lab. MWF VI-IX; 352Ph.) Mr. Valasek.

## POLITICAL SCIENCE

## FIRST TERM

- 1su. American Government and Politics. (Part I of Political Science 1-2-3.) An examination of the fundamentals of American government; nature and growth of the Constitution; citizenship; individual rights and liberties; political parties; public opinion; nominations and elections. Special attention will be given to wartime changes and possible postwar developments, throughout the course. (3 cred.; all; no prereq.; MTWThF I; 211Bu.) Miss Christensen.
- 2su. American Government and Politics. (Part II of Political Science 1-2-3.) Organization of national, state, and local governments; legislative, executive, and judicial branches and their procedures. (3 cred.; all; no prereq.; MTWThF II; NHAud.) Mr. Fluno.
- 15su. Elements of Political Science. The nature and functions of the state; sovereignty and liberty; constitutions, forms of government. (3 cred.; no prereq.; MTWThF III; JAud.) Mr. McLaughlin.
- 25su. World Politics. An introduction to the field of contemporary international relations; the policies of the great powers today; nationalism; internationalism; Europe and the postwar settlement. (3 cred.; all; no prereq.; MTWThF IV; BuAud.) Mr. Mills.

‡A fee of \$3 per term is charged for this course.

‡‡A fee of \$1 per term is charged for this course.

‡‡‡A fee of \$2 per term is charged for this course.

- 100su. The Constitution and Social Change. The historical background of American constitutionalism; executive, legislative, and judicial influences in the "changing constitution"; judicial review and the industrial revolution; federal centralization; the growth of administrative agencies and their particular wartime significance; the New Deal and the Constitution. (3 cred.; jr., sr., grad.; no prereq.; MTWThF III; 209Bu.) Mr. Harris.
- 120su. Municipal Functions. A general survey of "line" functions: safety, health, welfare, works, utilities, etc. (3 cred.; prereq. 6 cred.; or consent of instructor; MTWThF I; 111NH.) Mr. Ludwig.
- 126su.\* Government and the Economic Order. An examination of the powers of national, state, and local governments in the United States to regulate the various forms of business enterprise. A survey of the policies with reference to selected topics such as the trust problem, public utilities, communication agencies, food and drug legislation, and others. Emphasis on the legislative background, legal and administrative problems, and judicial interpretation of the statutes. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; MTWThF I; 110P.) Mr. Harris.
- 128su.\* Community Postwar Planning. Community development; population problems; economic base of community; use areas; circulation; housing; community facilities and services; public finance; planning procedures and aids; organization for planning. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; MTWThF II; 221Bu.) Mr. Ludwig.
- 137su.\* American Political Parties. A survey of the historical and contemporary activities of American Political parties; the boss and the machine; nomination of candidates; party propaganda in elections; the services of parties in a democracy. (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci., or consent of instructor; MTWThF IV; 209Bu.) Mr. Christensen.
- 160su.\* American Political Thought. An examination and appraisal of the more significant political ideas of American statesmen, writers, and movements from colonial times to the present. Special attention is given to the spokesmen of the movements of protest, discontent, and revolution. (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; MTWThF II; 111Bu.) Mr. McClosky.
- 161su.\* Problems of Democracy. The meaning of democracy; an examination and evaluation of the criticisms and defenses of democracy; an analysis of democratic institutions in America with special reference to the problems of postwar reconstruction. (3 cred.; jr., sr., grad.; others with consent of instructor; MTWThF III; 221Bu.) Mr. McClosky.
- 183su. International Law in the Postwar World. Legal problems in connection with military government, punishment of war crimes, use and outlawry of atomic weapons, the veto power and other questions of international organization. Prospects and limitations of the present international legal system; problems of codification. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; MTWThF I; 209Bu.) Mr. McLaughlin.
- 198su. Contemporary World Problems. Japanese imperialism in Southeastern Asia and the Philippines; India; the interests of the United States and the other Western powers; the postwar settlement in Southeastern Asia. (3 cred.; soph. with a "C" average, jr., sr., grad.; no prereq.; MTWThF II; 209Bu.) Mr. Mills.
- 201su.\* Seminar in American Government, Politics, and Administration. General topic: Problems of Legislative Reorganization. (Cred. ar.; grad., and sr. with the consent of instructor; ar.; first meeting 12:00 noon first day of classes; 207Bu.) Mr. Short.

Note: Course 113su offered this term in the program on Russia and the Far East will carry credit in Political Science.

## SECOND TERM

- 1su. American Government and Politics. (Part I of Political Science 1-2-3.) (See Pol.Sci. 1su, first term.) (3 cred.; all; no prereq.; MTWThF III; 211Bu.) Mr. Penniman.
- 3su. American Government and Politics. (Part III of Political Science 1-2-3.) The role and functions of American government, in the spheres of business, social welfare, defense, and foreign affairs. (3 cred.; all; no prereq.; MTWThF I; 211Bu.) Mr. Hagan.
- 7su. Comparative European Government. An introduction to and analysis of the governments of England, France, Italy, Germany, and Soviet Russia. Structural features, parties, and politics; ideologies; fundamental principles. (3 cred.; all; no prereq.; MTWThF II; 211Bu.) Mr. Hannah.
- 15su. Elements of Political Science. The nature and functions of the state; sovereignty and liberty; constitutions, forms of government. (3 cred.; no prereq.; MTWThF IV; 211Bu.) Mr. Saunders.
- 143su. The Government of the U.S.S.R. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; MTWThF I; 200Pt.) Mr. Gurian.
- 162su. Recent Political Thought. An examination, comparison, and evaluation of the main ideas in the political philosophy of socialism, communism, fascism, and democracy. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; MTWThF III; 111NH.) Mr. Saunders.
- 184su. International Organization. Nature and development of the international community. Principles, practices, and agencies which characterize the state system of international relations. The United Nations. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; MTWThF II; 209Bu.) Mr. Hagan.
- 202su.\* Seminar in American Government, Politics, and Administration. (Cred. ar.; grad. and sr. with consent of instructor; first meeting 12:00 noon first day of classes; ar. with instructor.) Mr. Penniman.

Note: The following courses offered this term on Russia and the Far East will carry credit in Political Science: 143su, 144su, 145su, and 146su.

## PSYCHOLOGY

## FIRST TERM

- 1su. General Psychology. First half of 1-2su. (3 cred.; 3 qtr. fr. with "C" aver., soph., jr., sr.; no prereq.; MTWF IV, ThV; 206Pt.) Mr. Clark.
- 1-2su. General Psychology. An introductory survey of psychology; its materials, fundamental laws, applications, and relations to other sciences. (6 cred.; 3 qtr. fr. with "C" aver., soph., jr., sr.; no prereq.; Sec. 1, MTWThF I-II, 2P, Mr. Baden, Mr. Goffard; Sec. 2, MTWF III-IV, Th V; 2P, Mr. Rosen, Mr. Simos; Sec. 3, MTWThF VI-VII, 2P, Mr. Gough, Mr. Dahlstrom.)
- 4-5su.‡ 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. Gen. Psy.; Sec. 1, MTWThF VI-VII-VIII, 211Psy, Mr. Herbert; Sec. 2, MTWThF I-II-III, 211Psy, Mr. John.)
- 70su. 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; MTWThF I; 115Psy.) Mr. Clark.

‡ A fee of \$2 is charged for this combination.

- 124su. Psychology of Learning. A review and comparison of the modern theories of learning: connectionism, associationism, conditioning, and field theories. The application of the theories to practical situations will be indicated as the occasion demands. (3 cred.; jr., sr., grad.; prereq. gen. psy.; MTWF IV, Th V; 115Psy.) Mr. Heron.
- 130su.¶¶ Vocational and Occupational Psychology. Theory and practice in present-day vocational guidance. Theory and use of the *Dictionary of Occupational Titles* in the United States Employment Offices and in industry. Experience in interviewing and in giving, scoring, and interpreting vocational tests is provided. (3 cred.; jr., sr., grad.; prereq. 9 cred. in psy.; lect. MF IV, Th V; lab. TW IV-V; 211Psy.) Mr. McClelland.
- 144-145su. Abnormal Psychology. A survey of ideas of causation and of techniques of treating abnormal behavior from early historical times; social aspects of the care and treatment of the abnormal in America. Consideration of the various psychoses and psychoneuroses and of social problems related to them. (6 cred.; jr., sr., grad.; prereq. gen. psy.; MTWThF II-III; 206Pt.) Mr. Bird.
- 191su. Theory of Projective Techniques. Discussion of the theory, nature, and administration of projective methods of studying personality. Stress will be placed on an analysis of the experimental data of better known methods, and on the underlying assumptions and theories. (3 cred.; sr., grad.; prereq. Ed.Psy. 120 and Psy. 171-172; or consent of instructor; MTWThF II; 115Psy.) Mr. Rotter.
- 210su. Research Problems. (Cred. ar.; grad. students only; students should register only with instructor's permission; hrs. ar.) Mr. Heron.
- 250su.\* Topics in Psychology. Independent reading under tutorial supervision. May be in any field of psychology agreed upon by the student and the instructor. (Cred. usually 3, but may be ar.; hr. ar.) Mr. Heron.
- 291su. Practicum in Use and Interpretation of Projective Techniques. This course will include supervised practice in administration, scoring, and some interpretation of such projective methods as the Rorschach, Thematic Apperception Test, Picture Frustration Test, and Incomplete Sentences Test. Tests will be administered to a variety of subjects and scoring and interpretation will be discussed in class. (3 cred.; grad.; prereq. Psy. 171-172, Ed.Psy. 142 and registration in Psy. 191 and consent of instructor; ar.; ar.) Mr. Rotter.

## SECOND TERM

- Asu.¶ Elementary Psychology. An introduction to psychology with special attention to its applications. (5 cred.; fr.,§ see important footnote, soph.; no prereq.: MTWThF II-III; BuAud.) Mr. Herbert.
- 1-2su. General Psychology. (See 1-2su, first term.) (6 cred.; 3 qtr. fr. with "C" aver., soph., jr., sr.; no prereq.; Sec. 1, MTWThF I-II, 2P, Mr. Baden, Mr. Goffard; Sec. 2, MTWF III-IV, Th V, 2P, Mr. Rosen, Mr. Simos.)
- 2su. General Psychology. Second half of 1-2su. (3 cred.; soph., jr., sr.; prereq. first half of 1-2; MTWF IV, Th V; 206Pt.) Mr. Heron.
- 4-5su.‡ Introductory Laboratory Psychology. (See 4-5su, first term.) (4 cred.; soph., jr., sr.; prereq. gen. psy.; MTWThF VI-VII-VIII; 211Psy.) Mr. John.

§ 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.

¶ Psychology A is intended primarily for students in home economics, nursing, and dental hygiene. Not for students who expect to take Senior College courses in psychology later. Psychology A may not be counted toward meeting the natural science requirement for entrance to the Senior College, nor is it to be taken as a substitute for Psychology 1-2 where the latter is prescribed. A student who has taken Psychology A cannot get credit for any part of Psychology 1-2.

‡ A fee of \$2 is charged for this combination.

¶¶ A fee of \$1 is charged for this course.

- 111su. *Frontiers of Psychology*. A treatment of topics which are not often discussed in academic psychology because they are on the borderline between science and superstition but which are of great interest especially in times of severe emotional stress. These topics will include: spiritualism and mediumship; telepathy; clairvoyance; suggestion; and hypnosis. (3 cred.; jr., sr., grad; prereq. gen. psy.; MTWThF I; 206Pt.) Mr. Heron.
- 125-126su. *Psychology of Individual Differences*. Quantitative studies on the contributions of such factors as sex, age, race, physical traits, family heredity, and environment, to the causation of individual differences. (6 cred.; jr., sr., grad; prereq. Psy. 1-2, 4-5, or 5 cred. in statistics; MTWThF II-III; 206Pt.) Miss Tyler.
- 160su. *Psychology in Personnel Work*. Psychology as applied to the selection and retention of a stabilized personnel in business. The standardized interview; principles and techniques of employment tests; methods of judging character qualities; the rating scale; personnel classification methods. (3 cred.; jr., sr., grad.; prereq. gen. psy.; MTWThF IV; 106Pt.) Mr. Longstaff.
- 167su. *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. Psy. 140 or 141; MTWThF I; 115Psy.) Mr. Clark.
- 171-172su. *Introduction to 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. Students planning to use this course professionally should postpone taking it until they are in the graduate school. (6 cred.; sr., grad.; prereq. Psy. 144-145, either 125-126 or Ed.Psy. 120, or 5 cred. in statistics and 6 additional cred. in psy. or child welfare, or ed. psy.; MTWThF II-III; 115Psy.) Mr. Meehl.
- 210su. *Research Problems*. (Cred. ar.; grad. students only; students should register only with the instructor's permission; ar.: ar.) Mr. Clark.
- 250su.\* *Topics in Psychology*. Independent reading under tutorial supervision. May be in any field of psychology agreed upon by the student and the instructor. (Cred. usually 3, but may be ar.; hrs. ar.) Mr. Clark.

## ROMANCE LANGUAGES

## FIRST TERM

## FRENCH

- 1su. *Beginning French*. (5 cred.; all; no prereq.; MTWThF I-II; 202F.) Mr. Clefton.
- 2su. *Beginning French*. (5 cred.; all; prereq. 1 or one year of high school French; MTWThF I-II; 206F.) Mr. Wilson.
- 3su. *Intermediate French*. (5 cred.; prereq. 2 or two years high school French; MTWThF III, IV; 201F.) Mr. Sullivan.
- 4su. *Intermediate French*. (5 cred.; all; prereq. 3 or three years of high school French; MTWThF III, IV; 207F.) Mr. Fermaud.
- 54su. *Practical French Conversation*. Equiv. to French 54w. (2 cred.; prereq. 3-4 or equiv.; TWThF I; 203F.) Mr. Sullivan.
- 119su. *Eighteenth Century French Literature: Voltaire*. Equiv. to French 119w. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; TWThF III; 203F.) Mr. Sirich.
- 159su. *Contemporary Novel II: Social Problems*. Equiv. to French 159s. (Course conducted in French.) (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; TWThF II; 203F.) Mr. Fermaud.

166su. French Poetry after 1850. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; TWThF IV; 203F.) Mr. Clepton.

### SPANISH

- 1su. Beginning Spanish. (5 cred.; all; no prereq.; MTWThF I-II; 227F.) Mr. Sirich.  
 2su. Beginning Spanish. (5 cred.; all; prereq. 1 or one year of high school Spanish; MTWThF I-II; 11F.) Mrs. Mills.  
 3su. Intermediate Spanish. (5 cred.; all; prereq. 1-2 or two years of high school Spanish; MTWThF I-II; 226F.) Miss Corbett.  
 4su. Intermediate Spanish. (5 cred.; all; prereq. 3 or three years of high school Spanish; MTWThF III, IV; 227F.) Mr. Pattison.  
 53su. Spanish Composition. Equiv. to Spanish 53f. (2 cred.; jr., sr.; prereq. 3-4 or equiv.; TWThF III; 202F.) Mr. Cúneo.  
 54su. Spanish Conversation. Equiv. to 54w. (2 cred.; jr., sr.; prereq. 3-4 or equiv.; MTWF IV; 226F.) Mrs. Mills.  
 62su. Advanced Spanish Conversation. (2 cred.; jr., sr.; prereq. 54-55 or 20 with grade of "B"; TTh VI-VII; 203F.) Mr. Floripe.  
 73su. Latin-American Culture. (Course conducted in Spanish.) (2 cred.; jr., sr.; prereq. 4 or equiv.; TWThF I; 201F.) Mr. Cúneo.  
 74su. Survey of Spanish-American Literature: Contemporary Period. Equiv. to 74f. (2 cred.; jr., sr.; prereq. 4 or equiv.; TWThF II; 12F.) Mr. Floripe.  
 80su. La Novela Ibero-Americana y los Problemas Sociales. (2 cred.; jr., sr.; prereq. 20 or 53 or permission of instructor; MTWF IV; 202F.) Mr. Cúneo.  
 141su. Contemporary Spanish-American Poetry. Equiv. to Spanish 141w. (2 cred.; jr., sr., grad.; prereq. 65-66-67 or 68-69 or 74-75-76; TWThF III; 226F.) Mr. Floripe.  
 175su. Twentieth Century Spanish Novel. Equiv. to Spanish 175w. (2 cred.; jr., sr., grad.; prereq. 68-69 or equiv.; TWThF II; 201F.) Mr. Pattison.

### INSTITUTE OF SPANISH-AMERICAN STUDIES

Latin America looms large in the commercial and cultural relations of the United States. Beginning in 1933, the federal government, through its Good Neighbor policy, brought to the attention of educational centers in particular and the public as a whole, the importance of hemispheric solidarity. Since then everything possible has been done to strengthen the bonds which unite the two Americas.

The Institute was organized in 1942 to give intensive, efficient, and adequate training in Spanish in a short time. Its two main purposes are (a) to teach the active use of Spanish and (b) to interpret the culture behind the language, stressing the culture of Latin America. The idea is to bring to the school a cross-section of Latin America, that is, to offer the students an opportunity to acquire fluency in speaking Spanish and to know the ways of the Spanish-speaking peoples, plus an understanding of the social institutions on which the language is based.

All classes are conducted in Spanish. In all courses the aural-oral method will be used. Students will practice pronunciation every day with the native teachers, and by means of phonograph records and the Mirrophone. Movies will be used to teach Spanish and to depict Spanish life.

Acceptance in the Institute implies a promise to use no other language than Spanish. An essential object of the Institute is to teach Spanish in Spanish and to have fun while doing it.

The Institute will serve to give the teachers of Spanish an increased skill in teaching by analyzing (a) the problems and methods connected with it and (b) the different aids

(games, films, phonograph records, publications, etc.) that are used to enliven the dull monotony of rules and sequences and the necessary rigidity of grammar.

Reading in Spanish will be used as an incentive to conversation in questions and answers in full-bodied sentences based upon the material studied. Songs will be taught to keep the students and teachers in tune with the infinite variations in the music of the Latins.

The above mentioned areas of study will be implemented with the preparation of units of study to be used in classrooms for the promotion of Latin American understanding and cultural appreciation.

In addition to the regular classes, there will be an interesting series of evening programs in Spanish, which will include tertulias of a purely social nature, games, group singing, book exhibitions, etc.

Arrangements are being made to meet the needs of (1) elementary, (2) intermediate, and (3) advanced students. The program carries ten quarter credits. The Institute will be staffed by Professor James A. Cuneo, director, and an adequate number of native assistants. The cost, without board and room, will be \$40. Applications should be mailed to Professor James A. Cuneo, 225 Folwell, University of Minnesota, Minneapolis 14, on or before June 15, 1947. Registration will follow the usual Summer Session procedure as described elsewhere in this bulletin. Requests for further information should be addressed to the Director of the Summer Session, 850 Administration Building, University of Minnesota, Minneapolis 14.

## SECOND TERM

### FRENCH

- 1su. Beginning French. (See 1su. first term.) (5 cred.; all; no prereq.; MTWThF I-II; 202F.) Ar.
- 2su. Beginning French. (5 cred.; all; prereq. 1 or one year of high school French; MTWThF I-II; 206F.) Ar.
- 3-4su. Intermediate French. (5 cred.; all; prereq. 2 or 3 or two or three years of high school French; MTWThF III, IV; 202F.) Mr. Desgranges.
- 55su. Practical French Conversation. Equiv. to French 55s. (2 cred.; prereq. 3-4 or equiv.; TWThF II; 203F.) Mr. Desgranges.
- 120su. Eighteenth Century French Literature: Rousseau. Equiv. to French 120s. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; TWThF III; 203F.) Mr. Clefton.

### SPANISH

- 1su. Beginning Spanish. (5 cred.; all; no prereq.; MTWThF I-II; 201F.) Mr. Rodgers.
- 2su. Beginning Spanish. (5 cred.; all; prereq. Spanish 1; MTWThF I-II; 226F.) Mr. Orellana.
- 3-4su. Intermediate Spanish. (5 cred.; all; prereq. 2 or 3 or two or three years of high school Spanish; MTWThF III, IV; 201F.) Mrs. Holian.
- 55su. Spanish Conversation. Equiv. to 55s. (2 cred.; jr., sr.; prereq. 3-4 or equiv.; TWThF III; 209F.) Mr. Orellana.
- 106su. Spanish Syntax and Composition. Equivalent to Spanish 103f-104w-105s. (2 cred.; jr., sr., grad.; prereq. Spanish 60f or permission of instructor; TWThF I; 203F.) Mr. Pattison.
- 110su. Nineteenth Century Spanish Drama. Equivalent to 110f. (2 cred.; jr., sr., grad.; prereq. 65-66-67 or 68-69 or equiv.; TWThF II; ar.) Mr. Pattison.

## RUSSIA AND THE FAR EAST

Courses listed here will be accepted as parts of the program for degrees in the relevant Area Studies majors and for degrees in the related departments. 111su, 113su, 144su may be used either as history or political science. Reference is made to the Bulletin on the Programs in International Relations and Area Studies.

## FIRST TERM

- 1su. Beginning Russian. (4 cred.; all; no prereq.; TWThF I-II; 311F.) Mr. Reichardt. Same as Russian 1, page 33.
- 102su. Dostoevski and Tolstoy. Lectures on their most significant works with consideration of their European background. No knowledge of Russian required. (3 cred.; jr., sr., grad.; MTWThF III; 209½F.) Mr. Reichardt. Same as Russian 102, page 33.
- 107su. History of the Russian Empire. (3 cred.; jr., sr., grad.; MTWThF IV; 200Pt.) Mr. Black. Equivalent to Hist. 57a for undergraduates; to Hist. 108 for graduates, page 28.
- 108su. The Russian Revolution and the Soviet Union. (3 cred.; jr., sr., grad.; MTWThF V; 211Bu.) Mr. Lobanov-Rostovsky. Equivalent to Hist. 58a for undergraduates; to Hist. 109 for graduates, see page 29.
- 109su. The Near East in the 19th and 20th Centuries. (3 cred.; jr., sr., grad.; MTWThF II; 14P.) Mr. Black.
- 110su. The Middle East in the 19th and 20th Centuries. (3 cred.; jr., sr., grad.; MTWThF IV; 14P.) Mr. Anderson.
- 112su. Recent History of China. (3 cred.; jr., sr., grad.; MTWThF III; 200Pt.) Mr. Steiger.
- 113su.† The United States and the Far East. (3 cred.; jr., sr., grad.; MTWThF V; 111Bu.) Mr. Steiger.
- 156su. Readings in Modern History: Russia. (3 cred.; sr., grad.; MW VII-VIII; 112Bu.) Mr. Lobanov-Rostovsky. Equivalent to any quarter of Hist. 156-157-158.

## SECOND TERM

- 2su. Beginning Russian. (4 cred.; all; prereq. Russian 1 or equiv.; TWThF I-II; 311F.) Miss Niemi. Same as Russian 2, see page 33.
- 81su. Russian: Reading of Non-literary Texts. (3 cred.; jr., sr.; prereq. Russian 51-52-53 or consent of instructor; TWThF III-IV; 207NH.) Miss Niemi. Same as Russian 81, see page 33.
- 104su. The Golden Age of Russian Literature, 1782-1917. Reading knowledge of Russian desirable, but not required. (3 cred.; jr., sr., grad.; MTWThF I; 100Pt.) Mr. Spector.
- 105su. Contemporary Russian Literature, 1917-47. Reading knowledge of Russian desirable, but not required. (3 cred.; jr., sr., grad.; MTWThF III; 5F.) Mr. Spector.
- 108su. The Russian Revolution and the Soviet Union. (3 cred.; jr., sr., grad.; MTWThF V; 111Bu.) Mr. Black. Equivalent to Hist. 58a for undergraduates; Hist. 109 for graduates, see page 29.
- 111su. Russia and Asia. (3 cred.; jr., sr., grad.; MTWThF I; 221Bu.) Mr. Lobanov-Rostovsky.
- 143su.† The Government of the U.S.S.R. (3 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or consent of instructor; MTWThF I; 200Pt.) Mr. Gurian. Same as Pol.Sci. 143su, see page 41.
- 144su.† Soviet Theory: a study of the development and principles of Bolshevism. (3 cred.; jr., sr., grad.; prereq. 9 cred. in soc. sci. or consent of instructor; MTWThF III; 221Bu.) Mr. Gurian.

† This course carries credit in Political Science and History.



- 145su.† Public Administration in the Soviet Union. (3 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or consent of instructor; MTWThF II; 221Bu.) Mr. Hazard.
- 146su.† Jurisprudence and Legal System of the Soviet Union. (3 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or consent of instructor; MTWThF IV; 209Bu.) Mr. Hazard.
- 157su. Readings in Modern History. Equivalent to any quarter of Hist. 156-157-158. (3 cred.; sr., grad.; Sec. I: The Balkans, TTh VII-VIII, 112Bu, Mr. Black; Sec. II: Russia, MW VII-VIII, 112Bu, Mr. Lobanov-Rostovsky.)

## RUSSIAN

See Linguistics and Comparative Philology, page 33.

## SOCIAL SCIENCE

See General Studies, page 25.

## SOCIOLOGY AND SOCIAL WORK

### FIRST TERM

### SOCIOLOGY

- 1su. 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; the processes involved in social change and the social problems that accompany social change. A survey of the fundamental social institutions such as the family and the church; the development and decline of social institutions; change in the institutional functions and social disorganization. (3 cred.; all; no prereq.; Sec. 1, MTWThF I, 110NH, Mr. Selznick; Sec. 2, MTWThF I, 204NH, Mr. Kyllonen; Sec. 3, MTWThF II, 204NH, Mr. Kyllonen; Sec. 4, MTWThF IV, 204NH, ar.)
- 2su. Individual and Minority Group Adjustment. The influence of social interaction on personality and personality adjustment with special reference to the family. The role of attitude and prejudice in relation to racial and other minority groups. Forms of social opposition including competition, class tension, and warfare. Adjustment of tensions and frustrations with relation to leadership, crowd behavior, and fascism. Social control and social change in relation to postwar objectives. (3 cred.; prereq. 1; Sec. 1, MTWThF I, 14P, Mr. Johnson; Sec. 2, MTWThF II, 211NH, Mr. Selznick.)
- 14su. Rural Sociology. A study of rural and urban relationships. The position of an agricultural class in an industrial society. (For students of the College of Agriculture, Forestry, and Home Economics.) (3 cred.; prereq. 1; MTWThF II; 3MNH.) Mr. Marshall.
- 45su. Social Statistics. (5 cred.; prereq. 1. Not open to students who have received credit in Econ. 5; MTWThF II; 202NH; MTWTh III-IV; 202NH.) Mr. Sletto.
- 91su. Case Method Applied to the Study of Human Problems. (3 cred.; jr., sr.; prereq. 50 or 51 or consent of major adviser; MTWThF IV; 210P.) Miss Nagel.
- 110su. Rural Community Organization. (3 cred.; jr., sr., grad.; prereq. Soc. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor; MTWThF IV; 102NH.) Mr. Marshall.

† This course carries credit in Political Science or History.

- 118su. Interaction of Racial and Cultural Groups. 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. Soc. 1 and 15 credits in soc. sci., child welfare, ed., phil., or psy., or consent of instructor; MTWThF II; 110P.) Mr. Kirkpatrick.
- 119su. The Family. With special reference to contemporary marriage problems. (3 cred.; jr., sr., grad.; prereq. Soc. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor; MTWThF III; 211NH.) Mr. Kirkpatrick.
- 162su. Field Work and Laboratory Training in Social Research. (2 cred.; jr., sr., grad.; prereq. 45 or 122 which may be taken simultaneously; ar.) Mr. Sletto.
- 200su.\* Seminar in Sociology. (2 cred.; ar.) Staff.

### SOCIAL WORK

- 129su. Principles of Social Case Work. A study of the purposes, problems, and processes of generic social case work, including a study of the relationship between the individual and the social worker and community as contributory to the treatment of the problems presented. (3 cred.; grad.; MTWThF I; 101NH.) Mrs. Scott.
- 133su. Social Case Work in Health Problems. Discussion of the meaning of illness in a case work situation with a correlation of the medical and social needs of an individual and his family. (3 cred.; grad.; prereq. 129, 136; MTWThF IV; 101NH.) Mrs. Clendenning.
- 134su. The Child and the State. Development of the rights of the child in relation to parental rights as evidence in child labor laws, the juvenile courts, adoption, mothers' aid legislation, the changing status of the illegitimate child, and public organization for more effective administration of laws relating to child dependency, delinquency and neglect. (3 cred.; grad.; MTWThF III; 218P.) Mr. Guilford.
- 151su. Public Welfare. History and functions of public welfare administration with special emphasis on public assistance. (3 cred.; grad.; MTWThF II; 101NH.) Mr. Guilford.
- 173Bs. Behavior Problems in Older Children. (The same as Child Welfare 141su.) (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; MTWThF III; 202Pt.) Miss Blodgett.
- 180su.‡ Field Work Training in Social Work. (3-6 cred.; grad.§) Mrs. Scott, Mrs. Clendenning.
- 236su.\* Special Studies in Social Work. (1-9 cred.; grad.§) Staff.
- 240su.\* General Seminar in Social Work. (2 cred.; ar.) Staff.

### SECOND TERM

#### SOCIOLOGY

- 1su. 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; the processes involved in social change and the social problems that accompany social change. A survey of the fundamental social institutions such as the family and the church; the development and decline of social institutions; change in the institutional functions and social disorganization. (3 cred.;

§ Admission on consultation with a social work adviser.

‡ A fee of \$3.50 is charged for this course. In Summer Sessions credit toward 153-154-155, 156-157-158, and/or 221-222-223, 227, 228-229, may be taken under number 180 or 181.

- all; no prereq.; Sec. 1, MTWThF I, 110NH, Mr. Zadrozny; Sec. 2, MTWThF I, 14P, ar.; Sec. 3, MTWThF III, 106NH, Mr. Monachesi; Sec. 4, MTWThF II, 110NH, Mr. Zadrozny.)
- 29su. Individual and Minority Group Adjustment. The influence of social interaction on personality and personality adjustment with special reference to the family. The role of attitude and prejudice in relation to racial and other minority groups. Forms of social opposition including competition, class tension, and warfare. Adjustment of tensions and frustrations with relation to leadership, crowd behavior, and fascism. Social control and social change in relation to postwar objectives. (3 cred.; prereq. 1; MTWThF II; 216NH.) Mr. Johnson.
- 49su. Social Problems. A survey course of contemporary social problems with especial emphasis on the conditions and processes in personal demoralization and social disorganization. The scientific approach to the study of poverty, unemployment, physical diseases and defectiveness, mental deficiency, insanity, vagrancy, suicide, etc. (3 cred.; 2nd qtr. fr.; prereq. Soc. 1; MTWThF III; 110NH.) Ar.
- 53su. Elements of Criminology. A general survey of the field of criminology. (3 cred.; jr., sr.; prereq. Soc. 1; MTWThF II; 102NH.) Mr. Topping.
- 103su. Sociology of Conflict. (3 cred.; jr., sr., grad.; prereq. Soc. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor; MTWThF III; 218P.) Mr. Topping.
- 120su. Social Life and Cultural Change. The theory of cultural lag. The idea of progress. The genesis of the unilinear conception of change and its implications for sociological theory. (3 cred.; jr., sr., grad.; prereq. Soc. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor; MTWThF I; 204NH.) Mr. Schneider.
- 132su. Juvenile Courts and Probation. (3 cred.; jr., sr., grad.; prereq. 53; MTWThF II; 101NH.) Mr. Monachesi.
- 145su. Theories of Social Reconstruction. American reformers and reform movements from the 1830's to the present. Societies of cooperation and religious communisms in the United States. The muckrakers. The effects of war behavior on social reconstruction and reform movements. (3 cred.; jr., sr., grad.; prereq. Soc. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy., or consent of instructor; MTWThF IV; 110NH.) Mr. Schneider.
- 200su.\* General Seminar in Sociology. (2 cred.; ar.) Staff.

## SOCIAL WORK

- 124su. Community Organization. An analysis of the process by which groups and individuals within a community work together toward a social goal. Critical examination of selected community organization projects implements this study. (3 cred.; grad.; prereq. 109 or equiv.; MTWThF I; 110P.) Mr. Kidneigh.
- 139su. Personality Development As It Affects Social Case Work. A consideration of factors involved in personality development and how these factors involved in personality development aid case work practice. (3 cred.; grad.; prereq. 170 or equiv. and consent of instructor; MTWThF III; 102NH.) Mrs. Shea.
- 170su. Introductory Psychiatry. A lecture course, including a discussion of mental hygiene, mental mechanisms, psychiatric history-taking, review of schools of psychiatry, classification of mental diseases. (3 cred.; grad.; MTWThF III; ar.) Dr. Hinckley.
- 171su. Descriptive Neuropsychiatry. (Same as Medicine 171.) (3 cred.; prereq. 70 or Psy. 144-145; MTWThF ar.; ar.) Dr. Baker.
- 173Asu. Behavior Problems in Younger Children. (The same as Child Welfare 140su.) (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; MTWThF I; 202Pt.) Miss Templin.

- 176su. Dynamics of Human Behavior Based on Psychoanalytic Theory. The application of psychoanalysis in the understanding of abnormal behavior; the lectures deal essentially with abnormal behavior, especially in relation to problems met by the social worker and teacher. (3 cred.; grad.; ar.) Ar.
- 181su.‡ Field Work Training in Social Work. (3-6 cred.; grad.§.) Mrs. Shea.
- 236su.\* Special Studies in Social Work. (1-9 cred.; grad.§) Staff.
- 240su.\* General Seminar in Social Work. (2 cred.; ar.) Staff.

## SPEECH

## FIRST TERM

- Speech Clinic.‡‡‡ For students who have particular speech defects such as cleft palate, stuttering, lisping, dialect. (Ar. with Miss Thorn, acting director.)
- 1su.‡‡ Fundamentals of Speech. Development of basic skills in speech: voice and action, oral reading, discussion, extemporaneous speaking. (3 cred.; fr., soph., jr., sr.; Sec. 1, MTWThF I, 305F; Sec. 2, MTWThF III, 305F; Sec. 3, MTWThF VI, 305F.) Mr. Gilkinson and others.
- 2-3su.‡‡ Fundamentals of Speech. Continuation of Course 1 above. (Sec. 1, MTWThF II, 2F.; Sec. 2, MTWThF IV, 308F.) Ar.
- 31su.‡‡‡‡ 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. 1-2-3 or 5-6 or concurrent registration; MTWThF I; 19Mu.) Mr. Whiting.
- 32su.‡‡‡‡ Beginning Acting. Creative and technical approaches. (3 cred.; soph., jr., sr.; prereq. 31; MTWThF II; 19Mu.) Mrs. Turner.
- 34su.‡‡‡‡ Stagecraft. Construction and painting. (3 cred.; soph., jr., sr.; prereq. 31; MTWThF VI-VII; Stage, Mu.) Mr. Andrus.
- Ed.C.I.59su.‡‡‡‡‡ Speech in Elementary Grades. Discussion of the development of good speech habits for elementary school children and the identification and handling of speech difficulties in the elementary schoolroom. (3 cred.; jr., sr.; prereq. Ed. 61A-B or teaching experience, course in Fundamentals of Speech recommended; MTWThF VI; 106UHS.) Mrs. Chapman.
- 61su.‡‡ Personality Development Through Speech. A study of behavior as indicated through speech; why and how man talks; basic elements in the development of unsocial and inadequate emotional patterns; speech symptoms evaluated from cause and effect relations; psychologic and social factors in speech; analysis of individual problems of self-consciousness, stage fright, and ineffective speech behavior, speech as a means of self-control and social control as applied to teacher and pupil. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6, Psy. 1-2; MTWThF II; 306F.) Mr. Bryngelson.
- 65su.‡‡ Radio Speech. Speech arts and psychology of the radio. Announcing and broadcasting. The radio speech. Radio drama and interpretative reading, voice, diction, articulation, pronunciation, practice, exercises, projects, and reports on problems of appeal and audience response. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; MTWThF II; 302MurH.) Mr. Ziebarth.

§ Admission on consultation with a social work adviser.

‡ A fee of \$3.50 is charged for this course. In Summer Sessions credit toward 153-154-155, 156-157-158, and/or 221-222-223, 227, 228-229, may be taken under number 180 or 181.

‡‡ A fee of \$1 is charged for this course.

‡‡‡ A fee of \$3 per quarter is charged for students registered in the University. The clinic will accept a limited number of non-student patients on the payment of a fee of \$85 for the term of six weeks.

‡‡‡‡ A fee of \$2 is charged for this course.

‡‡‡‡‡ A fee of \$1 per credit is charged for this course.

- 66su.‡‡‡ 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. 1-2-3 or 5-6, 65 recommended; MTWThF VI; 302MurH.) Mr. Dusenbury.
- 67su.‡ 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. 1-2-3 or 5-6, 65 recommended; MTWThF II; 305F.) Mr. Dusenbury.
- 81su.‡ Interpretative Reading. Esthetic theory of literature and of oral reading. Practice in reading for interpretation and mastery of technique. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; MTWThF II; 308F.) Mr. Thompson.
- 93su.‡‡‡ Costuming. Designing, making, and selecting costumes for the theater. (3 cred.; jr., sr.; prereq. 31; MTWThF IV; Stage, Mu.) Miss Hetzel.
- 102su. Argumentation and Persuasion. Argumentation as a method of analysis of controversial questions, briefing, adaptive and nonadaptive persuasion; practice in speaking and writing. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, Psy. 1-2, 10 cred. in soc. sci.; MTWThF VII; 308F.) Mr. Howell.
- 106su. 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. 1-2-3 or 5-6, and permission of instructor; MTWThF VI; 308F.) Mr. Howell.
- 111su.‡‡‡ Stage Direction. Theory and practice in conducting rehearsals with special emphasis on the one-act play. (3 cred.; sr., grad.; prereq. 31, 32-33, 34, 91, 92, 93; MTWThF IV; 18Mu.) Mr. Lippman.
- 122su. 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. 1-2-3 or 5-6, Psy. 1-2; MTWThF VI; 411F.) Mr. Gilkinson.
- 125su. Speech for the Deaf. Production of speech by the deaf through tactile, kinesthetic and visual control of motor speech skills. (3 cred.; prereq. permission of instructor; MTWThF VI; 311F.) Miss Patton.
- 127su. Language Training for the Deaf. Linguistic problems inherent in deafness; reading, composition and special techniques of language construction. (3 cred.; prereq. permission of instructor; MTWThF VII; 311F.) Miss Patton.
- 151su§ (Ed.C.I.140su). The Teaching of Speech. Orientation in problems of speech education. Review of studies. Teaching methods and special devices, voice recording, tests. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6 or equiv. or permission of instructor; MTWThF III; 308F.) Mr. Gilkinson.
- 152su. Problems of Hearing. A study of the hearing mechanism and its function, techniques of determining hearing acuity and electronic aids to hearing. (3 cred.; prereq. 1-2-3 or 5-6, 61, 67, Psy. 1-2, or permission of instructor; MTWThF IV; 406F.) Mr. Hedgecock.
- 162su.\* Speech Pathology. Neurology of Speech. Dysphemia and its associated symptom, stuttering. Relation of sidedness and speech disorders, heredity, current theories of dysphemia, types of treatment. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6 and 61, 67; MTWThF III; 406F.) Mr. Bryngelson.
- 164-165-166su.\*¶ Clinical Methods in Speech Pathology. (3 cred.; sr., grad.; prereq. 1-2-3 or 5-6, and 61, 67, 162-163, Ed.Psy. 140-142; consult instructor; MTWThF IV; 411F.) Mr. Bryngelson.

§ Carries undergraduate credit only in the College of Education.

¶ Students should register for this course for six weeks. They may take two quarters. (Listed in Education as Ed.C.I. 174-175-176.)

‡ A fee of \$1 is charged for this course.

‡‡‡ A fee of \$2 is charged for this course.

- 181su.\* Readings in Speech. Directed readings and the preparation of reports on selected subjects. (Cred. ar.; jr., sr., grad.; prereq. 1-2-3 or 5-6 and 6 additional credits and consent of instructor; ar.; ar.) Staff.
- 207su.\* Seminar in Rhetoric and Persuasion. Study of English and American persuasive speaking. Critical examination of the literature of rhetoric. Individual research projects. (3 cred.; prereq. 1-2-3 or 5-6, 101-102, Psy. 1-2, 10 credits in soc. sci.; ar.; 414F.) Mr. Howell.
- 291su.\* Research in Special Problems. (Cred. ar.; ar.) Staff.

## SECOND TERM

- Speech Clinic.‡‡ For students who have particular speech defects such as cleft palate, stuttering, lisping, dialect. (Ar. with Mrs. Chapman, acting director.)
- 1su.‡ Fundamentals of Speech. Same as first term. (Sec. 1, MTWThF II, 322F; Sec. 2, MTWThF IV; 308F.) Mr. Gilkinson and others.
- 2-3su.‡ Fundamentals of Speech. Continuation of Course 1 above. (Sec. 1, MTWThF I, 308F; Sec. 2, MTWThF III, 305F.) Ar.
- 33su.‡‡‡ Beginning Acting. Creative and technical approaches. (3 cred.; soph., jr., sr.; prereq. 31, 32; MTWThF I; 19Mu.) Mr. Thompson.
- 65su.‡ Radio Speech. Same as first term. (MTWThF VI; 302Mur.H.) Mr. Ziebarth.
- 71su.‡‡‡ Play Production. Problems of dramatic production in the secondary school. (3 credit; prereq. 1-2, or 5, 31, 32 or consent of instructor; ar.; UHS.) Mr. Thompson.
- 81-82su.‡ Interpretative Reading. Same as first term. (MTWThF II; 308F.) Mrs. Turner.
- 91su.‡‡‡ Scenic Design. Theory and practice of designing scenery as a functional environment for the stage play. (3 cred.; prereq. 31; jr., sr.; MTWThF VII; 20Mu.) Ar.
- 112su.‡‡‡ Stage Direction. Same as first term. (3 cred.; sr., grad.; prereq. 31, 32, 34, 91-92-93; MTWThF VI; 19Mu.) Mr. Whiting.
- 181su.\* Readings in Speech. Same as first term. Staff.
- 291-292su.\* Research in Special Problems. Same as first term. Staff.

## ZOOLOGY

(Credit is given for acceptable work done at any accredited marine or freshwater biological station.)

## FIRST TERM

- 1su.‡‡‡‡§ General Zoology. Structure, physiology, embryology, classification, and evolution of animals. (5 cred.; all; no prereq.; lect. MTWThF V, 150Ph, Mr. Olson; lab. Sec. 1, MWF III-IV, TTh II-III-IV, 101, 107Z, ar.; lab. Sec. 2, MWF VI-VII, TTh VI-VII-VIII, 101, 107Z, ar.)
- 21su.‡‡‡‡ Histology. Microscopic structure of the tissues and organs. (5 cred.; soph., jr., sr.; prereq. 1-2-3 or equiv.; lect. MTWTh VI, F VI-VII; 211Z; lab. MTWTh VII, VIII, IX; 201Z.) Mr. Ringoen.

§ The entire course in elementary zoology includes both 1su and 2su. No credit is given for 1su until the satisfactory completion of 2su.

‡ A fee of \$1 is charged for this course.

‡‡ A fee of \$3 per quarter is charged for students registered in the University. The Clinic will accept a limited number of non-student patients on the payment of a fee of \$85 for the term of six weeks.

‡‡‡ A fee of \$2 is charged for this course.

‡‡‡‡ A fee of \$2.25 is charged for this course.

‡‡‡‡‡ A fee of \$1.50 is charged for this course.

- 22su.††† 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 or equiv.; lect. MTWTh VI, F VI, VII; 313Z; lab. MTWTh VII-VIII-IX, S3Z.) Mr. Eddy.
- 107su.†† Protozoology. A survey of the protozoa, with special reference to their structure, life histories and physiology. (3 cred.; jr., sr., grad.; prereq. 15 cred. of zool.; lect. MTWTh VI, 209Z; lab. MTWTh VII-VIII, 208Z.) Mr. Osterud.
- 181su. Endocrines and Reproduction. Lectures and readings on the endocrines with special reference to those concerned with the physiology of reproduction. (3 cred.; jr., sr., grad.; prereq. 15 cred. including course 21 or equiv.; lect. MTWF IV, Th III-IV; 211Z.) Mr. Ringoen.
- 197su.\* Problems. Advanced work in some special line. (3 cred. or more; jr., sr., grad.; prereq. 1-2-3 and special requirements; ar.) Ar.

## SECOND TERM

- 2su.‡§ General Zoology. Continuation of 1su. (5 cred.; all; prereq. 1su or equiv.; lect. MTWThF V, 150Ph, ar.; lab. Sec. 1, MWF III-IV, TTh II-III-IV, 101, 107Z, ar.; lab. Sec. 2, MWF VI-VII, TTh VI-VII-VIII, 101, 107Z, ar.)
- 51su.†† Introductory Animal Parasitology. An elementary course dealing with parasitic protozoa, worms, and anthropods, and their relation to diseases of man and animals. (5 cred.; jr., sr.; prereq. 1-2-3 or equiv.; lect. MTWTh VI, F VI-VII, 211Z; lab. MTWTh VII, VIII, IX, 208Z.) Mr. Wallace.
- 198su.\* Problems. Advanced work in some special line. (5 cred. or more; jr., sr., grad.; prereq. 1-2-3 and special requirements; ar.) Ar.

For additional courses see Biological Station of the University of Minnesota, page 78.

§ The entire course in elementary zoology includes both 1su and 2su. No credit is given for 1su until the satisfactory completion of 2su.

‡ A fee of \$2.25 is charged for this course.

†† A fee of \$1.50 is charged for this course.

††† A fee of \$7 is charged for this course.

## INSTITUTE OF TECHNOLOGY

### COLLEGE OF ENGINEERING AND ARCHITECTURES

An *asterisk* (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 16.)

#### AERONAUTICAL ENGINEERING

Aeronautical Engineering Laboratory fee required of sophomores, juniors, and seniors in Aeronautical Engineering \$1.50 per term (\$3 per quarter).

##### SUMMER QUARTER

- 1su. Aeronautics. (Page 76) (3 cred.; prereq. M.&M. 24; MWF V; 105A.) Ar.  
83su. Stresses in Simple Structures. (Page 77) (4 cred.; prereq. M.&M. 128; lect. MWF II, 105A; lab. T III-IV, 9A.) Ar.  
100su. Aerodynamics (Page 77) (3 cred.; prereq. Aero.E. 1 and M.&M. 25; MWF III; 105A.) Ar.  
101su. Aerodynamics. (Page 77) (3 cred.; prereq. Aero.E. 100; MWF IV; 105A.) Ar.  
102su. Aerodynamics. (Page 77) (3 cred.; prereq. Aero.E. 101; MWF VI; 105A.) Ar.  
106su. Advanced Aerodynamics. (Page 77) (3 cred.; prereq. Aero.E. 120 and 130; MWF I; 105A.) Ar.  
115su. Airplane Stresses. (Page 77) (3 cred.; prereq. Aero.E. 83; lect. TTh IV, 105A; lab. M VI-VII, 9A.) Ar.  
120su. Airplane Design. (Page 77) (2 cred.; prereq. Aero.E. 83, 102 and M.&M. 128; TTh II; 105A.) Ar.  
121su. Airplane Design. (Page 77) (2 cred.; prereq. Aero.E. 120; TF VII; 105A.) Ar.  
122su. Airplane Design. (Page 77) (2 cred.; prereq. Aero.E. 121; TTh I; 105A.) Ar.  
130su. Aerodynamic Design Laboratory. (Page 77) (2 cred.; prereq. reg. in Aero.E. 120; WF II-IV; 9A.) Ar.  
131su. Airplane Design Laboratory. (Page 77) (2 cred.; prereq. reg. in Aero.E. 121; T VIII-X, Th VI-VIII; 107A.) Ar.  
132su. Airplane Design Laboratory. (Page 77) (2 cred.; prereq. reg. in Aero.E. 122; MTh II-IV; 9A.) Ar.  
135su. Airplane Static Test. (Page 77) (2 cred.; prereq. Aero.E. 121; lect. T VI, 105A; lab. T II-IV, 107A.) Ar.  
191su. Seminar. (Page 78) (1 cred.; prereq. Aero.E. 101; W VII; 105A.) Ar.

#### ARCHITECTURE

##### SUMMER QUARTER

##### DESIGN

Major and consulting critics: Mr. Cerny, Mr. Gilbertson, Mr. McClure, Mr. Robertson, and Mr. Stone.

Completion of these courses is dependent on achievement, rather than time. Students will continue their registration until the course is completed and a mark is reported. An acceptable quality of work normally allows a rate of progress as indicated for each course.

§ Page numbers in course descriptions refer to the Bulletin of the Institute of Technology for 1946-48, where further information may be found.



The object of the courses in architectural design is to develop the individual student's skill in creative effort as applied to the production of architecture. They provide opportunity for the student to exercise himself in all necessary phases of that creative effort, including, especially, research, composition, construction, and representation as four essential and interrelated parts of one unified process.

The courses consist of a series of problems, classified into three stages of advancement called grades, and culminating in a thesis whose satisfactory completion is a prerequisite for the degree in architecture. Most problems are done under criticism in which critics representing the several phases involved will collaborate. Certain problems are done entirely without criticism, in order to develop and test more fully the student's own power of independent achievement.

Work in all these courses is carried on simultaneously and continuously. A student may enter or leave them at any time he is judged ready to do so. They are administered by a design committee consisting of the major and consulting critics and Mr. Roy Jones, chairman. See also Statement Concerning Courses in Architectural Design issued by the School of Architecture.

AD-Isu.‡ Architectural Design, Grade I. (Page 82.) (5 cred.; prereq. Arch. 40 or equiv.) Ar.

AD-IIsu.‡ Architectural Design, Grade II. (Page 82) (5 cred.; prereq. AD-I.) Ar.

AD-IIIIsu.‡ Architectural Design, Grade III. (Page 82) (7 cred.; prereq. AD-II.) Ar.

AD-IVsu.‡‡ Architectural Thesis. (Page 82) (15 cred.; prereq. AD-III.) Ar.

### DRAWING, PAINTING, AND MODELING

Completion of these courses is dependent on achievement rather than time. Students will continue their registration until the course is completed and a mark is reported. An acceptable quality of work normally allows a rate of progress as indicated for each course.

The object of these courses is to develop students' skill in esthetic expression through the medium of form and color. Courses consist of studio exercises divided into successive stages of advancement called grades. Work in most of the grades is carried on continuously. A student may enter or leave them at any quarterly interval he is judged ready to do so. Mr. Turner.

DP-Isu.‡‡‡ Drawing and Painting, Grade I. (Page 82.) (2 to 4 cred.; no prereq.)

DP-IIsu.‡‡‡ Drawing and Painting, Grade II. (Page 83) (2 to 4 cred.; prereq. DP-I or equiv.)

DP-IIIIsu.‡‡‡ Drawing and Painting, Grade III. (Page 83) (2 to 4 cred.; prereq. DP-II or equiv.)

DP-IVsu.‡‡‡ Drawing and Painting, Grade IV. (Page 83) (2 to 4 cred.; prereq. DP-III or equiv.)

DP-Vsu.‡‡‡ Drawing and Painting, Grade V. (Page 83) (2 to 4 cred.; prereq. DP-IV or equiv.)

M-Isu.‡‡‡ Modeling, Grade I. (Page 83) (2 to 4 cred.; no prereq.)

M-IIIsu.‡‡‡ Modeling, Grade II. (Page 83) (2 to 4 cred.; prereq. M-I or equiv.)

M-IIIIsu.‡‡‡ Modeling, Grade III. (Page 83) (2 to 4 cred.; prereq. grad. students only, continuation of M-II.)

‡ A fee of \$2 is charged for this course.

‡‡ A fee of \$5 is charged for this course.

‡‡‡ A fee of \$1 is charged for this course.

## CIVIL ENGINEERING

## SUMMER QUARTER

- 11su. Surveying. (Page 91) (3 cred.; prereq. M.&M. 12 and Draw. 2.) Mr. Boon, Mr. Lyon.  
 Sec. 1, lect. T I, 5E; lab. M I-IV, F II-IV, 229E  
 Sec. 2, lect. Th I, 5E; lab. T I-IV, Th II-IV, 229E
- 13su. Surveying. (Page 91) (3 cred.; prereq. C.E. 11.) Mr. Boon, Mr. Morris.  
 Sec. 1, lect. T VI; 7E; lab. M VII-X, W VII-IX, 229E  
 Sec. 2, lect. T IV, 22E; lab. M I-IV, W II-IV, 217E  
 Sec. 3, lect. Th IV, 22E; lab. T I-IV, Th I-III, 217E
- 14su. Surveying. (Page 91) (3 cred.; prereq. C.E. 13.) Mr. Brinker, Mr. Morris.  
 Sec. 1, lect. Th VI, 22E; lab. M VIII-X, Th VII-X, 217E  
 Sec. 2, lect. T IV, 7E; lab. W VIII-X, F I-IV, 217E  
 Sec. 3, lect. Th III, 22E; lab. T VII-X, F VII-IX, 229E
- 16su. Surveying. (Page 91) (2 cred.; prereq. C.E. 15.) Mr. Brinker.  
 Sec. 1, lect. MW VI, 22E; lab. T VII-X, 217E  
 Sec. 2, lect. TF VI, 22E; lab. F VII-X, 217E  
 Sec. 3, lect. TTh II, 3E; lab. Th VII-X, 229E
- 31-32-33su. Stresses in Structures. (Page 92) (9 cred.; prereq. M.&M. 26 and Draw. 23.)  
 Mr. Graves.  
 Lect. MTWThF V, 136E                      Lab. Sec. 1, W VII-X, F VII-IX; 225E  
   Lab. Sec. 2, M VII-X, Th VII-IX; 225E
- 38-39-41su. Structural Design (Arch.) (Page 92) (9 cred.; prereq. M.&M. 93; lect.  
 MTWThF I, 227E; lab. F II-V, 225E.) Mr. Andersen.
- 130-131-132su. Structural Design. (Page 92) (7 cred.; prereq. C.E. 33 and M.&M. 128;  
 lect. MWThF VII, 227E; lab. TTh I-IV, 225E.) Mr. Hughes.
- 161su. Hydrology.
- 162su. Water Supply.
- 163su. Sewerage and Sewage Treatment. (Page 94) (9 cred.; prereq. M.&M. 129; lect.  
 MTWThF VI, F VIII, 227E; lab. MW I-IV, T VII-X, 225E.) Mr. Schroeffer,  
 Mr. Cornell.
- 233su. Advanced Foundations. (Page 93) (3 cred.; prereq. grad. stud.; MWTh III;  
 227E.) Ar.
- 247su. Seminar in Structural Engineering. (Page 93) (3 cred.; prereq. grad. stud.; MWF  
 VI; 110Ex.) Ar.
- 276su. Advanced Sanitary Engineering. (Page 95) (5 cred.; prereq. C.E. 173; MTWThF  
 IV; 227E.) Mr. Schroeffer.
- 280su. Civil Engineering Research. (Page 96) (5 cred.; prereq. C.E. 173, 174; MTWThF  
 III; 215E.) Mr. Schroeffer.

## DRAWING AND DESCRIPTIVE GEOMETRY

## SUMMER QUARTER

- 1su. Engineering Drawing. (Page 96) (3 cred.; prereq. Solid Geometry.) Ar.  
 Sec. 1, MWF I-II, Th II, ar.                      Sec. 3, TTh III-IV, W V-VI, Th VI, ar.  
 Sec. 2, MWF III-IV, Th I, ar.                      Sec. 4, MWF VII-VIII, T III, ar.
- 2su. Engineering Drawing. (Page 96) (3 cred.; prereq. Draw. 1.) Ar.  
 Sec. 1, MTWF I-II, ar.                              Sec. 3, MWThF V-VI, ar.  
 Sec. 2, MTWF III-IV, ar.                              Sec. 4, MW VII-IX, F VII-VIII, ar.
- 3su. Descriptive Geometry. (Page 96) (3 cred.; prereq. Draw. 2 and M.&M. 11; Sec. 1,  
 TTh I-IV, ar.; Sec. 2, TTh VI-IX, ar.; Sec. 3, MWF III-IV, W VIII-IX, ar.) Ar.

- 7su. Engineering Drawing. (Chem. and Chem.E.) (Page 96) (3 cred.; prereq. Solid Geometry; TTh VII-IX, 455C, T IV, 107E.) Ar.
- 8su. Descriptive Geometry. (Chem. and Chem.E.) (Page 97) (3 cred.; prereq. Draw. 7; TTh VII-X; 445C.) Ar.
- 10su. Solid Geometry. (Page 97) (No cred.; no prereq.; MWF IX; 203E.) Ar.
- 21su. Drafting. (C.E.) (Page 97) (2 cred.; prereq. Draw. 3; Sec. 1, TTh II-IV, 201E; Sec. 2, MWF I-II, 201E.) Ar.
- 22su. Structural Detailing. (C.E.) (Page 97) (2 cred.; prereq. Draw. 21; Sec. 1, TTh VII-IX, 201E; Sec. 2, TTh I-III, 101E.) Ar.
- 23su. Structural Detailing. (C.E.) (Page 97) (2 cred.; prereq. cred. or reg. in Draw. 22; Sec. 1, MW I-III, 101E; Sec. 2, TTh VII-IX, 101E; Sec. 3, MW VII-IX, 101E.) Ar.
- 26su. Drafting. (E.E.) (Page 97) (2 cred.; prereq. Draw. 3, MWF III-V; 305E.) Ar.
- 28su. Drafting. (Aero.E.) (Page 97) (2 cred.; prereq. Draw. 3, MWF I-III; 305E.) Ar.
- G.E.70. Slide Rule. (Page 104) (1 cred.; prereq. cred. or reg. in M.&M. 11; T IV; 335EE.) Ar.
- See page 70 for additional art courses by Mr. Doseff.

ELECTRICAL ENGINEERING

SUMMER QUARTER

- 11su. Elements of Electrical Engineering. (Page 100) (3 cred.; prereq. reg. in M.&M. 24; Sec. 1, MWF III, 335EE; Sec. 2, MWF II, 335EE.) Ar.
- 12su. Elements of Electrical Engineering Laboratory. (Page 100) (1 cred.; prereq. reg. or cred. in E.E. 11; 15EE.) Ar.
- |                  |                    |                     |
|------------------|--------------------|---------------------|
| Sec. 1, M I-II   | Sec. 7, T III-IV   | Sec. 13, M VII-VIII |
| Sec. 2, T I-II   | Sec. 8, W III-IV   | Sec. 14, W VII-VIII |
| Sec. 3, W I-II   | Sec. 9, Th III-IV  | Sec. 15, F VII-VIII |
| Sec. 4, Th I-II  | Sec. 10, F III-IV  | Sec. 16, M IX-X     |
| Sec. 5, F I-II   | Sec. 11, T VI-VII  | Sec. 17, T IX-X     |
| Sec. 6, M III-IV | Sec. 12, Th VI-VII |                     |
- 13su. Elements of Electrical Engineering. (Page 100) (3 cred.; prereq. E.E. 11 and reg. or cred. in M.&M. 25; Sec. 1, MWF V, 335EE; Sec. 2, MWF VIII, 335EE.) Ar.
- 14su. Elements of Electrical Engineering Laboratory. (Page 100) (1 cred.; prereq. E.E. 12 and reg. or cred. in E.E. 13; 9EE.) Ar.
- |                  |                     |                  |
|------------------|---------------------|------------------|
| Sec. 1, Th I-II  | Sec. 5, Th III-IV   | Sec. 9, T IX-X   |
| Sec. 2, M III-IV | Sec. 6, M VII-VIII  | Sec. 10, Th IX-X |
| Sec. 3, T II-III | Sec. 7, W VII-VIII  |                  |
| Sec. 4, W III-IV | Sec. 8, Th VII-VIII |                  |
- 15su. Elements of Electrical Engineering. (Page 100) (3 cred.; prereq. E.E. 13; Sec. 1, MWF I, 335EE; Sec. 2, MWF IV, 237EE.) Ar.
- 16su. Elements of Electrical Engineering Laboratory. (Page 100) (1 cred.; prereq. E.E. 14 and reg. or cred. in E.E. 15; 21EE.) Ar.
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|-----------------|-------------------|--------------------|
| Sec. 1, M I-III | Sec. 4, Th II-IV  | Sec. 7, W VI-VIII  |
| Sec. 2, W I-III | Sec. 5, M VI-VIII | Sec. 8, Th VI-VIII |
| Sec. 3, T II-IV | Sec. 6, T VI-VIII |                    |
- 36su. Electrical Engineering Survey. (M.E.) (Page 101) (3 cred.; prereq. Phys. 8; lect. TTh I, 138EE; lab. Sec. 1, T II-III, 207A EE; lab. Sec. 2, Th VII-VIII, 207A EE.) Ar.
- 37su. Electrical Engineering Survey (M.E.). (Page 101) (3 cred.; prereq. E.E. 36; lect. TTh III, 138EE; lab. Sec. 1, F VI-VIII, 207A EE; lab. Sec. 2, Th I-II, 207A EE.) Ar.

- 38su. Electrical Engineering Survey. (M.E.) (Page 101) (3 cred.; prereq. E.E. 37.) Ar.  
 Lect. MW I, 237EE      Lab. Sec. 1, W IX-X, 207C EE  
                                     Lab. Sec. 2, Th VI-VII, 207C EE  
                                     Lab. Sec. 3, F VI-VIII, 207C EE
- 43su. Electrical Engineering Survey. (Chem.E.) (Page 101) (3 cred.; prereq. Phys. 8;  
 lect. TTh I, 138EE; lab. Sec. 1, T II-III, 207A EE; lab. Sec. 2, Th VII-VIII,  
 207A EE.) Ar.
- 44su. Electrical Engineering Survey. (Chem.E.) (Page 101) (3 cred.; prereq. E.E. 43;  
 lect. TTh III, 138EE; lab. Sec. 1, F VI-VII, 207A EE; lab. Sec. 2, Th I-II,  
 207A EE.) Ar.
- 45su. Electrical Engineering Survey. (Chem.E.) (Page 101) (3 cred.; prereq. E.E. 44.)  
 Ar.  
 Lect. MW I, 237EE      Lab. Sec. 1, W IX-X, 207C EE  
                                     Lab. Sec. 2, Th VI-VII, 207C EE  
                                     Lab. Sec. 3, F VI-VII, 207C EE
- 46su. Electrical Engineering Survey and Aeronautical Radio. (Page 101) (3 cred.; sr.  
 Aero.E.; prereq. Phys. 9.) Ar.  
 Lect. TTh IV, 138EE      Lab. Sec. 1, T I-II, 207B EE  
                                     Lab. Sec. 2, Th I-II, 207B EE
- 47su. Electrical Engineering Survey and Aeronautical Radio. (Page 101) (3 cred.; prereq.  
 E.E. 46.) Ar.  
 Lect. TTh II, 237EE      Lab. Sec. 1, M I-II, 207EE  
                                     Lab. Sec. 2, W I-II, 207EE  
                                     Lab. Sec. 3, F I-II, 207EE
- 111su. Junior Electrical Engineering. (Page 100) (5 cred.; prereq. E.E. 15 and 16;  
 MTWThF VII; 335EE.) Ar.
- 112su. Junior Electrical Engineering Laboratory. (Page 100) (2 cred.; prereq. reg. in  
 E.E. 111; 107B EE.) Ar.  
 Sec. 1, M I-III              Sec. 4, F I-III              Sec. 7, W VIII-X  
 Sec. 2, T I-III              Sec. 5, M VIII-X            Sec. 8, Th VIII-X  
 Sec. 3, W I-III              Sec. 6, T VIII-X            Sec. 9, F VIII-X
- 113su. Junior Electrical Engineering. (Page 100) (3 cred.; prereq. E.E. 111 and 112;  
 MWF IV; 335EE.) Ar.
- 114su. Junior Electrical Engineering Laboratory. (Page 100) (2 cred.; prereq. reg. in  
 E.E. 113; 107C EE.) Ar.  
 Sec. 1, T VI-VII              Sec. 3, T III-IV  
 Sec. 2, Th VI-VII            Sec. 4, Th III-IV
- 115su. Junior Electrical Engineering. (Page 100) (3 cred.; prereq. E.E. 113 and 114;  
 MWF III; 237EE.) Ar.
- 116su. Junior Electrical Engineering Laboratory. (Page 100) (2 cred.; prereq. E.E. 115;  
 Sec. 1, W VI-VII; Sec. 2, M VIII-IX; Sec. 3, W I-II; 107C EE.) Ar.
- 117su. Engineering Electronics. (Page 100) (3 cred.; prereq. E.E. 111 and 112; MWF  
 VI; 335EE.) Ar.
- 118su. Engineering Electronics Laboratory. (Page 101) (1 cred.; prereq. reg. in E.E.  
 117; 227EE.) Ar.  
 Sec. 1, T VIII-IX            Sec. 3, T I-II  
 Sec. 2, Th VIII-IX            Sec. 4, Th I-II
- 119su. Engineering Electronics. (Page 100) (3 cred.; prereq. E.E. 117; TTh III, F II;  
 237EE.) Ar.

- 120su. Engineering Electronics Laboratory. (Page 101) (1 cred.; prereq. reg. in E.E. 119; 227EE.) Ar.  
 Sec. 1, M VI-VII                      Sec. 2, W VIII-IX                      Sec. 3, M I-II
- 121su. Senior Electrical Engineering. (Page 101) (3 cred.; prereq. E.E. 115, 116, and 119; MWF V; 238EE.) Ar.
- 122su. Senior Electrical Engineering Laboratory. (Page 101) (2 cred.; prereq. E.E. 116 and reg. in E.E. 121; 107A EE.) Ar.  
 Sec. 1, T I-III                      Sec. 2, Th I-III                      Sec. 3, W VIII-X
- 123su. Senior Electrical Engineering. (Page 101) (3 cred.; prereq. E.E. 121 and 122; MWF IV; 139EE.) Ar.
- 124su. Senior Electrical Engineering Laboratory. (Page 101) (2 cred.; prereq. reg. in E.E. 123; Sec. 1, M VIII-X; Sec. 2, Th VIII-X; 107A EE.) Ar.
- 132su. Electrical Design. (Page 101) (3 cred.; prereq. reg. in E.E. 121; MWF I; 139EE.) Ar.
- 134su. Electrical Design. (Page 101) (3 cred.; prereq. E.E. 132; MWF III; 139EE.) Ar.
- 138su. Power Systems. (Page 101) (3 cred.; prereq. cred. or reg. in E.E. 121; MWF I; 138EE.) Ar.
- 161-167su. Electric and Radio Communication. (Page 102) (6 cred.; prereq. reg. in E.E. 121.) Ar.  
 Lect. MTThF VI, 138EE    Lab. Sec. 1, T I-III, 308EE  
                                     Lab. Sec. 2, Th I-III, 308EE  
                                     Lab. Sec. 3, M VIII-X, 308EE
- 162-168su. Electric and Radio Communication. (Page 102) (6 cred.; prereq. E.E. 161-167.) Ar.  
 Lect. MWThF VII, 139EE    Lab. Sec. 1, T V-VII, 308EE  
                                     Lab. Sec. 2, W VIII-X, 308EE
- 163-169su. Electric Communication. (Page 102) (6 cred.; prereq. E.E. 162-168.) Ar.  
 Lect. MTWF V, 139EE    Lab. Sec. 1, Th V-VII, 308EE  
                                     Lab. Sec. 2, F VIII-X, 308EE
- 164su. Communication Circuits. (Page 102) (3 cred.; prereq. reg. in E.E. 121.) Ar.  
 Lect. TTh V, 238EE    Lab. Sec. 1, M VIII-X, 307EE  
                                     Lab. Sec. 2, W VIII-X, 307EE  
                                     Lab. Sec. 3, F VIII-X, 307EE
- 165su. Communication Circuits. (Page 102) (3 cred.; prereq. E.E. 165.) Ar.  
 Lect. TTh III, 139EE    Lab. Sec. 1, T VIII-X, 307EE  
                                     Lab. Sec. 2, Th VIII-X, 307EE

## ENGLISH (ENGINEERING)

## SUMMER QUARTER

- 4su. Written and Spoken Communication. (Page 103) (3 cred.; prereq. placement test; Sec. 1, MWF III, ar.; Sec. 2, MWF VII, ar.; Sec. 3, TTh II, M V, ar.; Sec. 4, MWF IV, ar.) Ar.
- 5su. Written and Spoken Communication. (Page 103) (3 cred.; prereq. Eng. 4; Sec. 1, MWF VII, ar.; Sec. 2, MWF VIII, ar.; Sec. 3, MWF IV, ar.; Sec. 4, TWF V, ar.) Ar.
- 6su. Written and Spoken Communication. (Page 103) (3 cred.; prereq. Eng. 5; Sec. 1, MWF I, ar.; Sec. 2, MWF II, ar.; Sec. 3, MWF VI, ar.) Ar.

- 6Asu. Written and Spoken Communication. (Page 103) (3 cred.; open only to veteran students who received credit for Eng. 4 and 5 under the E.I.V.; Sec. 1, MWF II, 138EE; Sec. 2, MWF I, 321EE.) Ar.
- 9su. Technical Discussions. (Page 104) (3 cred.; prereq. Eng. 6 or 6A; Sec. 1, MWF IV, 107E; Sec. 2, MWF VI, 321EE; Sec. 3, MWF V, 107E; Sec. 4, MWF VI, 107E.) Ar.

## GENERAL ENGINEERING

## SUMMER QUARTER

- 70su. (See Drawing and Descriptive Geometry, G.E. 70su, page 57.)
- 101su. Contracts and Specifications. Engineering contracts. Specification essentials; approved methods of handling construction projects; trade practices, workman compensation acts, unemployment compensation law, minimum wage and hour legislation. Powers and duties of engineer executive. (3 cred.; jr., sr.; Sec. 1, MWF IV, 304E; Sec. 2, MWF VI, 215E.) Mr. Fixen.

## MATHEMATICS AND MECHANICS

## SUMMER QUARTER

- 9su. Higher Algebra. (Page 107) (No cred.; no prereq.; MTWThF I; 206E.) Ar.
- 11su. College Algebra. (Page 107) (5 cred.; prereq. M.&M. 9 or equiv.) Ar.
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|-------------------------|--------------------------|
| Sec. 1, MTWThF II, ar.  | Sec. 3, MTWThF VI, ar.   |
| Sec. 2, MTWThF III, ar. | Sec. 4, MTWThF VIII, ar. |
- 12su. Trigonometry. (Page 107) (5 cred.; prereq. M.&M. 11.) Ar.
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|------------------------|--------------------------|
| Sec. 1, MTWThF I, ar.  | Sec. 3, MTWThF III, ar.  |
| Sec. 2, MTWThF II, ar. | Sec. 4, MTWThF VIII, ar. |
- 13su. Analytic Geometry. (Page 108) (5 cred.; prereq. M.&M. 12.) Ar.
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|-------------------------|------------------------|
| Sec. 1, MTWThF I, ar.   | Sec. 3, MTWThF V, ar.  |
| Sec. 2, MTWThF III, ar. | Sec. 4, MTWThF VI, ar. |
- 17su. Refresher Mathematics Course. (No cred.; no prereq.; MTWThF VII-VIII; 106E.) Ar.
- 24su. Calculus I: Differential. (Page 108) (5 cred.; prereq. M.&M. 13.) Ar.
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|------------------------|--------------------------|
| Sec. 1, MTWThF I, ar.  | Sec. 5, MTWThF VI, ar.   |
| Sec. 2, MTWThF II, ar. | Sec. 6, MTWThF VII, ar.  |
| Sec. 3, MTWThF IV, ar. | Sec. 7, MTWThF VIII, ar. |
| Sec. 4, MTWThF V, ar.  |                          |
- 25su. Calculus II: Integral. (Page 108) (5 cred.; prereq. M.&M. 24.) Ar.
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|--------------------------|-------------------------|
| Sec. 1, MTWThF II, 207NH | Sec. 4, MTWThF VI, ar.  |
| Sec. 2, MTWThF III, 203E | Sec. 5, MTWThF VII, ar. |
| Sec. 3, MTWThF IV, 3E    |                         |
- 26su. Technical Mechanics: Statics. (Page 108) (5 cred.; prereq. M.&M. 25.) Ar.
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|------------------------|---------------------------|
| Sec. 1, MTWThF J, ar.  | Sec. 4, MTWThF IV, ar.    |
| Sec. 2, MTWThF II, ar. | Sec. 5, MTWThF VII, 215E  |
| Sec. 3, MTWThF III, 3E | Sec. 6, MTWThF VIII, 106E |
- 84su. Technical Mechanics. (Chem., Chem.E., and Prebus.) (Page 108) (5 cred.; prereq. M.&M. 25 or 91; Sec. 1, MTWThF III, 4E; Sec. 2, MTWThF VIII, 227E.) Ar.
- 85su. Strength of Materials. (Chem., E.E., and Prebus.) (Page 109) (3 cred.; prereq. M.&M. 26 or 84; Sec. 1, MWF I, 3E; Sec. 2, MWF V, 206E.) Ar.

- 86su. Fluid Mechanics. (Aero.E., Chem.E., and E.E.) (Page 109) (3 cred.; prereq. M.&M. 26 or 84.) Ar.  
 Sec. 1, MWF IV, 22E  
 Sec. 2, TTh IV, F V, 110Ex  
 Sec. 3, MWF V, 22E  
 Sec. 4, MWF VIII, ar.  
 Sec. 5, TTh VIII, F IX, 22E
- 87su. Materials Testing Laboratory. (Chem.E., E.E., and Prebus.) (Page 109) (1 cred.; prereq. cred. or reg. in M.&M. 85.)  
 Sec. 1, T VI-VII, Ex  
 Sec. 2, T VIII-IX, Ex  
 Sec. 3, F VI-VII, Ex
- 91su. Calculus. (Arch. and Prebus.) (Page 108) (4 cred.; prereq. M.&M. 13; MTWF I; 304E.) Ar.
- 92-93su. Mechanics and Strength of Materials. (Arch.) (Page 108-109) (8 cred.; prereq. M.&M. 91; MTWF I-II, 203E.) Ar.
- 127su. Technical Mechanics: Dynamics. (Page 109) (5 cred.; prereq. M.&M. 26.) Ar.  
 Sec. 1, MTWThF I, 205E  
 Sec. 2, MTWThF III, 215E  
 Sec. 3, MTWThF IV, ar.  
 Sec. 4, MTWThF VI, 238EE  
 Sec. 5, MTWThF VII, ar.
- 128su. Strength of Materials. (Page 109) (5 cred.; prereq. M.&M. 26.) Ar.  
 Sec. 1, MTWThF III, 206E  
 Sec. 2, MTWThF V, 304E  
 Sec. 3, MTWThF VII, 215Ex  
 Sec. 4, MTWThF VI, 205E
- 129su. Fluid Mechanics. (C.E., Geol.E., Min.E., and Pet.E.) (Page 109) (4 cred.; prereq. M.&M. 26; Sec. 1, MTWTh II, 104E; Sec. 2, MTWTh III, 104E.) Ar.
- 130su. Fluid Mechanics. (M.E.) (Page 109) (5 cred.; prereq. M.&M. 26; Sec. 1, MTWThF II, 205E; Sec. 2, MTWThF III, 205E.) Ar.
- 141su. Materials Laboratory. (Page 109) (1 cred.; prereq. cred. or reg. in M.&M. 128.) Ar.  
 Sec. 1, T I-II, Ex  
 Sec. 2, Th I-II, Ex  
 Sec. 3, M I-II, Ex  
 Sec. 4, W I-II, Ex
- 143su. Hydraulics Laboratory. (Page 110) (1 cred.; prereq. cred. or reg. in M.&M. 86, 129 or 130.) Ar.  
 Sec. 1, M VI-VII, Ex  
 Sec. 2, W VI-VII, Ex  
 Sec. 3, T III-IV, Ex  
 Sec. 4, M VIII-IX, Ex
- 151su. Differential Equations. (Page 108) (3 cred.; prereq. M.&M. 25.) Ar.  
 Sec. 1, MWF II, ar.  
 Sec. 2, MWF I, ar.  
 Sec. 3, MWF III, 22E  
 Sec. 4, MWF VII, 104E
- 152su. Calculus IV: Special Topics in Advanced Calculus. (Page 108) (3 cred.; prereq. M.&M. 150; MWF I; 136E.) Ar.
- 154su. Vector Analysis. (Page 108) (3 cred.; prereq. M.&M. 25; MWF V, 106E.) Ar.

MECHANICAL ENGINEERING  
 SUMMER QUARTER

- 6su.‡ Machine Shop. (Aero.E., Mining, and Met.E.) (Page 110) (2 cred.; no prereq.) Ar.  
 Lect. TTh VIII, 153ME  
 Lab. Sec. 1, M VI-VIII, OSL  
 Lab. Sec. 2, W VI-VIII, OSL
- 8su.‡ Machine Shop. (E.E., Prebus.) (Page 110) (2 cred.; prereq. Draw. 2 and Inorg. Chem. 2, 5, 7, or 10.) Ar.  
 Lect. Sec. 1, TF VII, 153ME  
 Lect. Sec. 2, W II, F III, 153ME  
 Lect. Sec. 3, MF II, 153ME  
 Lab. Sec. 1, T VIII-X, OSL  
 Lab. Sec. 2, F VIII-IX, OSL  
 Lab. Sec. 3, T II-IV, OSL  
 Lab. Sec. 4, M I-III, OSL  
 Lab. Sec. 5, Th VIII-X, OSL

‡ A fee of \$2 per quarter is charged for this course.

- 11su.‡ Materials and Processes I. (Page 110) (2 cred.; prereq. Inorg.Chem. 2, 5, 7, or 10 and Draw. 2; Sec. 1, MW III, 153ME; Sec. 2, TTh IV, 202ME; Sec. 3, TTh VI, 202ME.) Ar.
- 12su.‡ Materials and Processes II. (Page 110) (2 cred.; prereq. M.E.—Inorg.Chem. 1 or 4, M.E. 11 or reg. in M.E. 11; Mines & Met.—Inorg.Chem. 1 or 4 and jr.; Prebus.—Inorg.Chem. 1 or 4 and M.E. 1 or 4.) Ar.
- |                                 |                             |
|---------------------------------|-----------------------------|
| Lect. Sec. 1, TTh VI, 153ME     | Lab. Sec. 3, W II-IV, ar.   |
| Lect. Sec. 2, MW I, 153ME       | Lab. Sec. 4, F II-IV, ar.   |
| Lect. Sec. 3, M VI, F IV, 153ME | Lab. Sec. 5, T VIII-X, ar.  |
| Lab. Sec. 1, M II-IV, ar.       | Lab. Sec. 6, Th VIII-X, ar. |
| Lab. Sec. 2, T I-III, ar.       | Lab. Sec. 7, F VIII-X, ar.  |
- 13su.‡ Materials and Processes III. (Page 110) (2 cred.; prereq. M.E.—Inorg.Chem. 2 or 5, Draw. 2, M.E. 11 or reg. in M.E. 11; Mines, Met.—Inorg.Chem. 2 or 5 and jr.) Ar.
- |                              |                            |
|------------------------------|----------------------------|
| Lect. Sec. 1, WF VI, 153ME   | Lab. Sec. 1, W VIII-X, ME  |
| Lect. Sec. 2, TTh I, 153ME   | Lab. Sec. 2, T II-IV, ME   |
| Lect. Sec. 3, TTh III, 153ME | Lab. Sec. 3, W II-IV, ME   |
|                              | Lab. Sec. 4, Th VII-IX, ME |
|                              | Lab. Sec. 5, T VII-IX, ME  |
- 14su.‡ Materials and Processes IV. (Page 110) (2 cred.; prereq. M.E. 11 or reg. in M.E. 11.) Ar.
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|-----------------------------|----------------------------|
| Lect. Sec. 1, TTh V, 153ME  | Lab. Sec. 1, W VII-IX, ME  |
| Lect. Sec. 2, TTh IV, 153ME | Lab. Sec. 2, F VII-IX, ME  |
|                             | Lab. Sec. 3, M VII-IX, ME  |
|                             | Lab. Sec. 4, Th VII-IX, ME |
- 15su.‡ Materials and Processes V. (Page 110) (2 cred.; prereq. M.E. 14.) Ar.
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|-----------------------------|---------------------------|
| Lect. Sec. 1, WF V, 153ME   | Lab. Sec. 1, T I-III, ME  |
| Lect. Sec. 2, MW VII, 153ME | Lab. Sec. 2, Th I-III, ME |
| Lect. Sec. 3, TTh II, 153ME | Lab. Sec. 3, F II-IV, ME  |
|                             | Lab. Sec. 4, W II-IV, ME  |
|                             | Lab. Sec. 5, T VII-IX, ME |
- 16su.‡ Materials and Processes VI. (Page 110) (2 cred.; prereq. M.E. 11, 12, 13, 14, and M.&M. 26.) Ar.
- |                                    |                            |
|------------------------------------|----------------------------|
| Lect. Sec. 1, W VII, F VIII, 202ME | Lab. Sec. 1, T VII-IX, ME  |
| Lect. Sec. 2, TTh I, 202ME         | Lab. Sec. 2, Th VII-IX, ME |
|                                    | Lab. Sec. 3, T II-IV, ME   |
|                                    | Lab. Sec. 4, F II-IV, ME   |
- 17su.‡ Materials and Processes VII. (Page 111) (2 cred.; prereq. M.E. 11, 12, 13, and 14.) Ar.
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|----------------------------------|---------------------------|
| Lect. Sec. 1, MW IV, 153ME       | Lab. Sec. 1, M VIII-X, ME |
| Lect. Sec. 2, Th VII, F I, 153ME | Lab. Sec. 2, Th III-V, ME |
|                                  | Lab. Sec. 3, W VIII-X, ME |
- 20su. Elementary Machine Design. (Page 111) (2 cred.; prereq. Draw. 3.) Ar.
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|---------------------------|---------------------------|
| Sec. 1, MWF I-II, 151ME   | Sec. 3, MWF VI-VII, 151ME |
| Sec. 2, MWF III-IV, 151ME |                           |
- 21su. Kinematics. (Page 111) (2 cred.; prereq. Draw. 3.) Ar.
- |                                     |
|-------------------------------------|
| Sec. 1, MWF I-II, 255ME             |
| Sec. 2, W VII-X, F VII-VIII, 255ME  |
| Sec. 3, T VII-X, Th VII-VIII, 255ME |

‡ A fee of \$2 per quarter is charged for this course



- 22su. Mechanism. (Page 111) (3 cred.; prereq. M.E. 21 and M.&M. 24.) Ar.  
 Sec. 1, lect. MTh V, 251ME; lab. F I-III, 252ME  
 Sec. 2, lect. TTh II, 251ME; lab. W II-IV, 252ME  
 Sec. 3, lect. MW I, 251ME; lab. M II-IV, 252ME  
 Sec. 4, lect. TTh VI, 251ME; lab. Th VII-X, 151ME
- 23su. Dynamics of Machinery. (Page 111) (3 cred.; prereq. M.&M. 127 and M.E. 22.) Ar.  
 Sec. 1, lect. TF IV, 251ME; lab. M V-VII, 252ME  
 Sec. 2, lect. MW IV, 251ME; lab. W VII-X, 252ME  
 Sec. 3, lect. MW VII, 251ME; lab. M VIII-X, 252ME
- 24su. Elements of Machine Design. (Page 111) (3 cred.; prereq. M.&M. 128.) Ar.  
 Sec. 1, lect. MW II, 254ME; lab. W VIII-X, 151ME  
 Sec. 2, lect. WF III, 251ME; lab. Th VIII-X, 252ME  
 Sec. 3, lect. MW VI, 251ME; lab. F VIII-X, 252ME
- 26su. Kinematics and Mechanism. (E.E., Aero.E., and Agr.E.) (Page 111) (3 cred.; prereq. M.&M. 24.) Ar.  
 Sec. 1, MWF III, 202ME  
 Sec. 2, MWF II, 251ME  
 Sec. 3, MWF V, 251ME  
 Sec. 4, MWF VIII, 251ME
- 33su. Mechanical Engineering Laboratory I. (Page 112) (2 cred.; prereq. M.E. 131 or reg. in 131.) Ar.  
 Lect. Sec. 1, T V, 154ME  
 Lect. Sec. 2, Th IV, 254ME  
 Lab. Sec. 1, W I-III, Ex  
 Lab. Sec. 2, M II-IV, Ex  
 Lab. Sec. 3, M VIII-X, Ex  
 Lab. Sec. 4, T VIII-X, Ex  
 Lab. Sec. 5, Th VIII-X, Ex
- 34su. Mechanical Engineering Laboratory II. (Page 112) (2 cred.; prereq. M.E. 33.) Ar.  
 Lect. Sec. 1, M II, 154ME  
 Lect. Sec. 2, Th II, 154ME  
 Lab. Sec. 1, M VIII-X, Ex  
 Lab. Sec. 2, W VIII-X, Ex  
 Lab. Sec. 3, T II-IV, Ex  
 Lab. Sec. 4, F II-IV, Ex
- 35su. Mechanical Engineering Laboratory III. (Page 113) (2 cred.; prereq. M.E. 34 and cred. or reg. in 141.) Ar.  
 Lect. Sec. 1, T II, 154ME  
 Lect. Sec. 2, M V, 154ME  
 Lab. Sec. 1, T V-VII, Ex  
 Lab. Sec. 2, F V-VII, Ex  
 Lab. Sec. 3, F VIII-X, Ex
- 40su. Heat Engines. (E.E.) (Page 113) (3 cred.; prereq. Phys. 7.) Ar.  
 Lect. Sec. 1, TTh IV, 154ME  
 Lect. Sec. 2, MW III, 154ME  
 Lect. Sec. 3, MW IV, 154ME  
 Lab. Sec. 1, F I-III, Ex  
 Lab. Sec. 2, Th VIII-X, Ex  
 Lab. Sec. 3, T I-III, Ex  
 Lab. Sec. 4, Th I-III, Ex  
 Lab. Sec. 5, F VIII-X, Ex
- 41su. Heat Engines. (E.E.) (Page 113) (3 cred.; prereq. M.E. 40.) Ar.  
 Lect. Sec. 1, WF II, 154ME  
 Lect. Sec. 2, TTh VI, 154ME  
 Lab. Sec. 1, W VII-IX, Ex  
 Lab. Sec. 2, F VII-IX, Ex  
 Lab. Sec. 3, M I-III, Ex  
 Lab. Sec. 4, W I-III, Ex
- 55su. Internal Combustion Engines. (E.E.) (Page 114) (3 cred.; prereq. M.E. 41.) Ar.  
 Lect. Sec. 1, TTh I, 101OSL  
 Lect. Sec. 2, TTh II, 101OSL  
 Lab. Sec. 1, Th V-VII, Ex  
 Lab. Sec. 2, Th VIII-X, Ex  
 Lab. Sec. 3, T V-VII, Ex  
 Lab. Sec. 4, T VIII-X, Ex

- 112su.† Plastic Processing. (Page 111) (3 cred.; prereq. M.E. 17 or approval of instructor; lect. MW VIII; 153ME; lab. hrs. ar.) Ar.
- 121su. Machine Design. (Page 112) (2 cred.; prereq. M.E. 24; Sec. 1, lect. Th I, 251ME; lab. Th II-IV, 255ME; Sec. 2, lect. T VII, 251MF, lab. T VIII-X, 252ME.) Ar.
- 131su. Thermodynamics. (Page 113) (3 cred.; prereq. M.&M. 25 and Phys. 8; Sec. 1, MWTh VII, M VIII-IX, 254ME; Sec. 2, MW VI, F VII-IX, 254MF; Sec. 3, TTh I, F II, T III-IV, 254ME.) Ar.
- 132su. Thermodynamics. (Page 113) (3 cred.; prereq. M.E. 131; Sec. 1, TThF VI, 254ME; Sec. 2, MWTh III, 254ME.) Ar.
- 141su. Heat Power Engineering. (Page 113) (3 cred.; prereq. M.E. 132; Sec. 1, MWF I, 254ME; Sec. 2, MWF IV, 254ME.) Ar.
- 142su. Advanced Heat Power Engineering. (Page 113.) (3 cred.; prereq. M.E. 141; MWF VI, 154ME.) Ar.
- 149su. Advanced Steam Laboratory. (Page 114) (2 cred.; prereq. M.E. 35, 132, and 141; M VII-X; Ex.) Ar.
- 150su. Internal Combustion Engines (M.E.). (Page 114) (4 cred.; prereq. M.E. 131; MTWF IV, 101 OSL.) Ar.
- 150Asu. Internal Combustion Engines. (Aero.E.) (Page 114) (4 cred.; prereq. M.E. 131 or Phys. 73; MTTh III, F VI; 101 OSL.) Ar.
- 154su. Design of Internal Combustion Engines. (Page 115) (2 cred.; prereq. M.E. 121 and 150; TW VI-VIII; 208 OSL.) Ar.
- 157su. Gas Turbine and Jet Propulsion Power Plants. (Page 115) (3 cred.; prereq. M.E. 150 or 150A; MWF V; 101 OSL.) Ar.
- 158su. Aero Engine Testing. (Page 115) (2 cred.; prereq. M.E. 150 or 150A or reg. in 150A; Th VI-VIII, F VII-IX; OSL.) Ar.
- 159su. Internal Combustion Engine Laboratory. (Page 115) (2 cred.; prereq. M.E. 150 or reg. in 150; M VII-X, T IX-X; OSL.) Ar.
- 160su. Heating and Ventilation. (Page 116) (3 cred.; prereq. M.E. 131, M.&M. 127 and 129 or 130; lect. MWF II, 110Ex.) Ar.
- 161su. Heating, Ventilation, and Air Conditioning Design. (Page 116) (2 cred.; prereq. M.E. 160; ThF V-VII, 252ME.) Ar.
- 162su. Heating, Ventilation, and Air Conditioning Design. (Page 116) (2 cred.; prereq. M.E. 161; TTh I-III; 252ME.) Ar.
- 169su. Heating and Ventilation Laboratory. (Page 116) (2 cred.; prereq. M.E. 35 and 160 or reg. in 160; W VII-X; Ex.) Ar.
- 171su. Elements of Industrial Engineering and Management. (Page 115) (3 cred.; prereq. M.E. 15, 16, and 17; MWF IV; 202ME.) Ar.
- 172su. Industrial Plants. (Page 116) (2 cred.; prereq. M.E. 171 and 174 or reg. in 174; lect. T VII, 202ME; lab. T VIII-X, 205ME.) Ar.
- 174su. Motion and Time Study Laboratory. (Page 116) (2 cred.; prereq. M.E. 171; lect. F VII, 202ME; lab. F VIII-X, 205ME.) Ar.
- 180su. Refrigeration. (Page 117.) (3 cred.; prereq. M.E. 132 and 160 or reg. in 160; MWF III; 201Ex.) Ar.
- 189su. Refrigeration Laboratory. (Page 117) (2 cred.; prereq. M.E. 180 or reg. in 180; Th VII-X; Ex.) Ar.
- 190-191-192su. Seminar. (Page 113) (1 cred.; prereq. sr.) Ar.  
     Sec. 1, T VI, 251ME      Sec. 3, F I, 154ME      Sec. 5, F VI, 251ME  
     Sec. 2, Th VI, 251ME      Sec. 4, M VI, 202ME

† A fee of \$2 per quarter is charged for this course.

## SCHOOL OF MINES AND METALLURGY

## MINING

## FIRST TERM

Min.15su. Field Trip. Field work on the iron ranges of Minnesota. Surveying of an underground mine, including shaft plumbing. Survey of open-pit mine including an estimate of the surface stripping. Solar and stellar observations. (8 cred.; prereq. 13, 14; 4 weeks beginning about June 15.) Mr. Lambert, Mr. Heilig.

## THIRD TERM

Min.139su. Practical Mining (Field Trip). Study of mining operations, mine plant, and mining in one or more mining camps. (6 cred.; prereq. jr. yr.; three weeks beginning about September 1.) Mr. Cook, Mr. Parker.

## METALLURGY

## SUMMER QUARTER

Met.1su. Assaying. Lectures on the fire assaying of ores and metallurgical products. Theory of sampling, balance manipulation, furnaces, slag calculations, oxidation, reduction, special methods, etc. (3 cred.; prereq. Chem. 5 or equiv.; lect. MWF I, lab. M VI-IX; 108AH.) Mr. Bitsianes.

Met.106su. Nonferrous Metallurgy. Metallurgical principles involved in nonferrous metallurgy including leaching, roasting, smelting, and refining. Metallurgy of copper. (3 cred.; prereq. General Inorg.Chem.; lect. MWF III; 108AH.) Mr. Bitsianes.

## FIRST TERM

Met.11su. Metallurgy of Pig Iron. Raw materials, construction, and basic principles of the blast furnace process. Chemistry of the process. Fluxes and slags. Principles for controlling operation and products. (3 cred.; prereq. Chem. 5 or equiv.; MTWThF II; 108AH.) Mr. Joseph.

## METALLOGRAPHY

## SUMMER QUARTER

152su.§ Metallography for Aeronautical Engineers. Principles; metallography of iron and steel with special reference to alloy steels, and light alloys used in airplane construction. Laboratory work and demonstrations. (3 cred.; prereq. sr. Aero.E.; TTh I; lab. Sec. 1, M VI-VIII; Sec. 2, Th VI-VIII; 315AH.) Mr. Mackay.

153su. Metallography. (Long course for metallurgical engineers.) Theory of metallic alloys. Metallographic technique. Properties of metals and alloys. Metallography of iron and steel and commercial alloys. Technical metallography. (4 cred.; prereq. Met. 12 or equiv.; lect. MWF I, lab. Sec. 1, T VI-IX; Sec. 2, T I-IV; 315AH.) Mr. Jerabek.

156su. Metallography for Mechanical, Mining, and Petroleum Engineers. Principles of metallography, including pyrometry, thermal analysis, constitution diagrams, microscopic and photomicrographic technique; metallography and heat treatment of iron and steel. (3 cred.; prereq. jr., sr.; lect. MF IV; lab. Sec. 1, W VI-VIII, Sec. 2, Th I-III; 315AH.) Mr. Jerabek.

160su.¶ Metallography (Chem.) Principles of metallography, including constitution diagrams, preparation, and standardization of thermocouples, preparation and thermal analysis of alloys, their microscopic examination and photomicrographs; typical alloy

§ May be offered first term if demand develops.

¶ May be offered second term if demand develops.

systems such as iron carbon (steel, cast iron), and some nonferrous alloys. (3 cred.; prereq. jr.; lect. TTh III; lab. Sec. 1, F VI-VIII, Sec. 2, W I-III; 315AH.) Mr. Mackay.

## SCHOOL OF CHEMISTRY

Students registering for laboratory courses in Chemistry or Chemical Engineering should purchase a \$5 Chemistry Deposit Card from the bursar. Course fee, laboratory material, and breakage will be deducted from the Chemistry Deposit Card.

### INORGANIC CHEMISTRY

#### FIRST TERM

- 1su.‡ General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals and their compounds. (4 cred.; all; no prereq.; Sec. 1, lect. MTWThF VI, 325C; rec. M V, 325C; lab. TTh VIII-X, ar.C, Mr. Pervier; Sec. 2, lect. MTWThF II, 225C; rec. M V, 225C; lab. TTh V-VII, ar.C, Mr. Lindeke; Sec. 3, lect. MTWThF VII, 225C; rec. W V, 225C; lab. TTh II-IV, ar.C, Mr. Brasted; Sec. 4, lect. MTWThF I, 225C; rec. T VIII, 225C; lab. TTh V-VII, ar.C, Mr. Johnson.)
- 4su.‡ General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals and their compounds. More intensive than Course 1. (4 cred.; for pre-medics, etc.; prereq. high school chemistry; Sec. 1, lect. MTWThF VII, 325C; rec. F V, 325C; lab. TTh II-IV, ar.C, Mr. Lindeke; Sec. 2, lect. MTWThF I, 100C; rec. M V, 100C; lab. TTh II-IV, ar.C, Mr. Nebergall; Sec. 3, lect. MTWThF II, 100C; rec. T VIII, 100C; lab. TTh V-VII, ar.C, Mr. Pray; Sec. 4, lect. MTWThF VI, 100C; rec. Th V, 100C; lab. TTh VIII-X, ar.C, Mr. Johnson.)
- 6su.‡ General Inorganic Chemistry. Study of the general laws of chemistry and of nonmetals and their compounds. (5 cred.; all; no prereq.; lect. MTWThF IV, 325C; rec. T V, 325C; lab. MWF VI-IX, ar.C.) Mr. Pervier or Mr. Brasted.
- 9su.‡ General Inorganic Chemistry. Study of general laws of chemistry and of nonmetals and their compounds. More intensive than Course 6. (5 cred.; prereq. high school chemistry; Sec. 1, lect. MTWThF VI, 225C; rec. Th V, 225C; lab. MWF VII-X, ar.C, Mr. Nebergall; Sec. 2, lect. MTWThF II, 325C; rec. Th V, 325C; lab. MWF VI-IX, ar.C, Mr. O'Brien.)
- 11su.‡‡ 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. MTWThF III, 100C; rec. W V, 100C; lab. TTh VI-IX, ar.C.) Mr. Barber.
- 12su.‡‡ 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. 7 or 10; lect. MTWThF II, 410C; rec. M V, 410C; lab. MWF VI-IX, ar.C.) Mr. Maynard.
- 13su.‡‡ Semimicro Qualitative Analysis. Laboratory work in systematic qualitative analysis of the anions with lectures on solutions, ionization, chemical and physical equilibria, oxidation, reduction, etc. (5 cred.; prereq. 12; lect. MTWThF III, 325C; rec. W V, 325C; lab. MTWF VII-X, ar.C.) Mr. Heisig.

‡ A fee of \$2 is charged for this course.

‡‡ A fee of \$2.40 is charged for this course. Non-veterans must purchase a \$5 chemistry blue purchase card from the bursar in the Administration Building before they will be assigned a desk in the laboratory. Veterans will receive information from the instructor concerning purchase card and checking into the laboratory. The course fee, laboratory material, and breakage will be punched out of the purchase card.

- 102su.\*‡‡ Semimicro Qualitative Analysis. Advanced analysis of the anions and cations. (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2; lect. and lab. hrs. ar.; ar.) Mr. Barber.
- 105su.\* Advanced Inorganic Chemistry. Coordination compounds. (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1 and 2, Org. Chem. 156; lect. MTWThF IV, 111C; rec. Th VI, 111C.) Mr. Maynard.
- 109su.\*‡ Synthetic Inorganic Chemistry. Methods of preparation and purification of inorganic compounds of special interest. Current literature. (3 to 5 cred.; jr., sr., grad.; prereq. 13 or permission of instructor; lect. and lab. hrs. ar.; ar.) Mr. Heisig.
- 301su.\* Research in Inorganic Chemistry. (Cred. and hrs. ar.) Mr. Barber, Mr. Heisig, Mr. Maynard, Mr. O'Brien.

## SECOND TERM

- 2su.‡ General Inorganic Chemistry. (See 1su. First Term.) (4 cred.; prereq. 1; Sec. 1, lect. MTWThF VI, 325C; rec. M V, 325C; lab. TTh VIII-X, ar.C, Mr. Brasted; Sec. 2, lect. MTWThF II, 225C; rec. M V, 225C; lab. TTh V-VII, ar.C, Mr. Lindeke; Sec. 3, lect. MTWThF VII, 225C; rec. W V, 225C; lab. TTh II-IV, ar.C, Mr. Brasted; Sec. 4, lect. MTWThF I, 225C; rec. T VIII, 225C; lab. TTh V-VII, ar.C, Mr. Johnson.)
- 5su.‡ General Inorganic Chemistry. (See 4su. First Term.) (4 cred.; prereq. 4; Sec. 1, lect. MTWThF VII, 325C; rec. F V, 325C; lab. TTh II-IV, ar.C, Mr. Lindeke; Sec. 2, lect. MTWThF I, 100C; rec. M V, 100C; lab. TTh II-IV, ar.C, Mr. Nebergall; Sec. 3, lect. MTWThF II, 100C; rec. T VIII, 100C; lab. TTh V-VII, ar.C, Mr. Pray; Sec. 4, lect. MTWThF VI, 100C; rec. Th V, 100C; lab. TTh VIII-X, ar.C, Mr. Johnson.)
- 7su.‡ General Inorganic Chemistry. (See 6su. First Term.) (5 cred.; prereq. 6; lect. MTWThF IV, 325C; rec. T V, 325C; lab. MWF VI-IX, ar.C.) Mr. Reyerson.
- 10su.‡ General Inorganic Chemistry. (See 9su. First Term.) (5 cred.; prereq. 9; Sec. 1, lect. MTWThF VI, 225C; rec. Th V, 225C; lab. MWF VII-X, ar.C, Mr. Nebergall; Sec. 2, lect. MTWThF II, 325C; rec. Th V, 325C; lab. MWF VI-IX, ar.C, Mr. O'Brien.)
- 11su.‡‡ Semimicro Qualitative Analysis. (See 11su. First Term.) 4 cred.; prereq. 2, 5, 7, or 10; lect. MTWThF III, 100C; rec. T V, 100C; lab. MW VI-IX, ar.C.) Mr. Barber.
- 12su.‡‡ Semimicro Qualitative Analysis. (See 12su. First Term.) (5 cred., prereq. 7 or 10; lect. MTWThF III, 100C; rec. T V, 100C; lab. MWF VI-IX, ar.C.) Mr. Barber.
- 103su.\* Advanced Inorganic Chemistry. Selected topics in advanced inorganic chemistry. (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1 and 2, Org. Chem. 156; lect. MTWThF IV, 111C; rec. Th VI, 111C.) Mr. O'Brien.
- 302su.\* Research in Inorganic Chemistry. (Cred. and hrs. ar.) Mr. Reyerson, Mr. Barber, Mr. O'Brien.

## SUMMER QUARTER

- 11su.‡‡ 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. 7 or 10; lect. MWF VII, 100C; lab. Sec. 1, Th VIII-X, F X; lab. Sec. 2, MW I-II; lab. Sec. 3, MW III-IV; ar.C.) Mr. Pray.

‡ A fee of \$2 is charged for this course.

‡‡ A fee of \$2.40 is charged for this course. Non-veterans must purchase a \$5 chemistry blue purchase card from the bursar in the Administration Building before they will be assigned a desk in the laboratory. Veterans will receive information from the instructor concerning purchase card and checking into the laboratory. The course fee, laboratory material, and breakage will be punched out of the purchase card.

## ANALYTICAL CHEMISTRY

## FIRST TERM

- 1su.‡ Quantitative Analysis. (Gravimetric.) Introductory course covering the general principles and methods of gravimetric analysis. Typical problems are assigned and attention given to proper laboratory practice. (5 cred.; prereq. qual. anal.; lect., rec., quiz TTh V-VI, F V, 315C; lab. MW V-VIII, TTh VII-VIII, F VI-VIII, 310C.) Mr. Herr.
- 7su.‡ Quantitative Analysis. (Premed.) Introductory course covering the general principles and methods of quantitative analysis, both gravimetric and volumetric. Typical problems are assigned and attention given to proper laboratory practice. (4 cred.; prereq. qual. anal.; lect., rec., quiz MWF V, 315C; lab. MWF VI-VIII, TTh V-VIII, 310C.) Mr. Herr.
- 96su. Senior Topics. (Cred., hrs., and rooms ar.) Mr. Herr.
- 123su.‡ Advanced Analytical Chemistry. Problems are assigned that involve special technique on more advanced theory than the basic courses. (3 cred.; prereq. grav. and vol. anal.; hrs. ar.; 310C.) Mr. Herr.
- 203su.\* Selected Topics in Analytical Chemistry. (Cred. and hrs. ar.; 310C.) Mr. Herr.
- 301su.\* Research in Quantitative Analysis. (Cred. and hrs. ar.; 310C.) Mr. Herr.

## SECOND TERM

- 2su.‡ Quantitative Analysis. (Volumetric.) Introductory course covering the general principles and methods of volumetric analysis. Typical problems are assigned and attention given to proper laboratory practice. (5 cred.; prereq. qual. anal.; lect., rec., quiz TTh V-VI, F V, 315C; lab. MW V-VIII, TTh VII-VIII, F VI-VIII, 310C.) Mr. Herr.
- 7su.‡ Quantitative Analysis. (Premed.) (See 7su, First Term.) (4 cred. prereq. qual. anal.; lect., rec., quiz MWF V, 315C; lab. MWF VI-VIII, TTh V-VIII, 310C.) Mr. Herr.
- 96su. Senior Topics. (Cred., hrs. and rooms ar.) Mr. Herr.
- 123su.‡ Advanced Analytical Chemistry. (See 123su, First Term.) (3 cred.; prereq. grav. and vol. anal.; hrs. ar.; 310C.) Mr. Herr.
- 203su.\* Selected Topics in Analytical Chemistry. (Cred. and hrs. ar.; 310C.) Mr. Herr.
- 301su.\* Research in Quantitative Analysis. (Cred. and hrs. ar.; 310C.) Mr. Herr.

## ORGANIC CHEMISTRY

## FIRST TERM

- 61su.‡‡ Elementary Organic Chemistry. (For all colleges.) Discussion of important classes of organic compounds, both aliphatic and aromatic. Laboratory work includes the preparation of typical substances. (4 cred.; prereq. 11 or 12; lect. MTWThF I, 325C; rec. TTh II, 315C; lab. MWF II-IV, 390C; lab. conference TTh III, ar.C.) Mr. Arnold and assistants.
- 110su.‡‡ Organic Qualitative Analysis. Reactions of typical functional groups, identification of pure organic compounds, separation, and identification of constituents of mixtures. (5 cred.; prereq. 156 and 159 or equiv.; lect. MWF IV, 315C; 15 hrs. of lab. work. ar.) Mr. Parham and assistants. (Limit 20 students.)
- 116su.\* Heterocyclic Compounds. A survey of important types of heterocyclic compounds; preparation, properties, uses, etc. (3 cred.; prereq. 156 and 159; MTWThF II; 115C.) Mr. Parham.

† To receive credit for any part of this course a student must complete both 61 and 62.

‡ A fee of \$2 is charged for this course.

‡‡ A fee of \$10 is charged for this course to cover special chemicals.

301su. Research in Organic Chemistry. (Cred. ar.; prereq. 110; hrs. ar.) Mr. Arnold, Mr. Parham.

## SECOND TERM

62su.†‡ Elementary Organic Chemistry. (See description for 61su.) (4 cred.; prereq. 1; lect. MTWThF I, 325C; rec. TTh II, 315C; lab. MWF II-IV, 390C; lab. conference TTh III; ar.) Mr. Lauer and assistants.

130su.‡ Organic Quantitative Analysis. Methods of proximate and ultimate analysis of organic compounds, with special attention to semimicro methods. (3 cred.; prereq. 156 and 159, Anal. Chem. 1 and 2 are advisable; hrs. ar.) Mr. Parham. (Limit 12 students.)

139su.‡ Advanced Organic Chemistry Laboratory Work. Selected laboratory problems of an advanced nature, including some original work. Ability to read German is assumed. (3 cred.; prereq. 156 and 159; hrs. ar.) Mr. Parham and assistants. (Limit 20 students.)

302su. Research in Organic Chemistry. (Cred. ar.; prereq. 110; hrs. ar.) Mr. Lauer, Mr. Parham.

## PHYSICAL CHEMISTRY

## FIRST TERM

107asu. Elementary Physical Chemistry. Primarily for premed. students. (6 cred. per qtr.; prereq. two years of college chemistry, one year of college physics; lect. MTWTh I, 410C, rec. F I, 410C; lab. MW VI-VIII, 190C.) Mr. Crawford.

104su, 105su, 106su. Physical Chemistry Laboratory. (1 or 2 cred. per term; MW VI-VIII; 190C.) Mr. Crawford.

301su. Research in Physical Chemistry. Mr. Crawford.

## SECOND TERM

107bsu. Elementary Physical Chemistry. (Premed.) See 107asu. Mr. Lipscomb.

104su, 105su, 106su. Physical Chemistry Laboratory. (1 or 2 cred. per term; MW VI-VIII; 190C.) Mr. Lipscomb.

302su. Research in Physical Chemistry. Mr. Lipscomb.

## CHEMICAL ENGINEERING

## FIRST TERM

102su.†† Unit Operations. Filtration, heat transfer, evaporation, humidification and air conditioning and drying, with solution of problems. (6 cred.; jr.; prereq. 80, Anal. Chem. 2; lect., MWF IV, 225C; rec., TTh I, W II, 215C; lab., Th V-IX, 90C.) Mr. Stoppel, Mr. Comley, Mr. Madden.

105su.\*††§ Fuels and Combustion. Technology of solid, liquid and gaseous fuels, analysis, interpretation, combustion characteristics, specific uses, and furnaces, calculation of heat and material balance. (4 cred.; jr.; prereq. Anal. Chem. 1, 2; lect., TF II, 111C; rec., MTh II, 111C; lab., T VI-IX, 10C.) Mr. Ceaglske, Mr. Stephenson, Mr. Jackson.

131su. Inorganic Technology. Application of unit operations, physical chemistry and chemical engineering economics to industrial inorganic processes. (4 cred.; jr. in Ch.E. or Chem.; prereq. ChE. 102 or by permission; lect., rec., MTWThF III; 115C.) Mr. Stephenson.

† To receive credit for any part of this course a student must complete both 61 and 62.

‡ A fee of \$2 is charged for this course.

§ Each laboratory section is limited to 16 students.

†† A few of \$2 per quarter is charged for this course. The student should purchase a \$5 chemistry deposit card from the bursar in the Administration Building. No student will be assigned a desk in the laboratory until he presents this card. The \$2 course fee, laboratory material, and breakage will be charged against the deposit.

- 132su. Organic Technology. Similar to Ch.E. 131 except applied to the organic industrial processes. (4 cred.; sr. in Ch.E. or Chem.; prereq. Ch.E. 103 and organic chem. or by permission; lect., rec., MTWThF III; 111C.) Mr. Mann.
- 151-152su.\*†§ Chemical Manufacture. Semi-works manufacture of inorganic and organic chemical products. (3 cred. each; prereq. 103, 131; lab. daily 8 a.m. to 6 p.m.; lect., rec., MTWThF I, 151 in 111C, 152 in 115C.) Mr. Mann, Mr. Ceaglske, Mr. Stoppel, Mr. Stephenson, Mr. Madden.
- 301-302-303su.\* Research in Chemical Engineering. (Ar.) Grad. faculty in Chem. Eng.

## SECOND TERM

- 102su.‡ Unit Operations. Filtration, heat transfer, evaporation, humidification and air conditioning and drying, with solution of problems. (6 cred.; jr.; prereq. 80, Anal. Chem. 2; lect., MWF IV, 225C; rec., TTh I, W II, 215C; lab., Th V-IX, 90C.) Mr. Stoppel, Mr. Comley, Mr. Madden.
- 105su.\*§† Fuels and Combustion. Technology of solid, liquid and gaseous fuels, analysis, interpretation, combustion characteristics, specific uses, and furnaces, calculation of heat and material balance. (4 cred.; jr.; prereq. Anal. Chem. 1, 2; lect., TF II, 111C; rec., MTh II, 111C; lab., T VI-IX, 10C.) Mr. Ceaglske, Mr. Stephenson, Mr. Jackson.
- 131su. Inorganic Technology. Application of unit operations, physical chemistry, and chemical engineering economics to industrial inorganic processes. (4 cred.; jr. in Ch.E. or Chem.; prereq. Ch.E. 102 or by permission; lect., rec., MTWThF III; 115C.) Mr. Stephenson.
- 132su. Organic Technology. Similar to Ch.E. 131 except applied to the organic industrial processes. (4 cred.; sr. in Ch.E. or Chem.; prereq. Ch.E. 103 and Org.Chem. or by permission; 4 lect., 1 rec. per week, MTWThF III; 111C.) Mr. Mann.
- 151-152su.\*†§ Chemical Manufacture. Semi-works manufacture of inorganic and organic chemical products. (3 cred. each; prereq. 103, 131; lab. daily 8 a.m. to 6 p.m.; lect., rec., MTWThF I, 151 in 111C, 152 in 115C.) Mr. Mann, Mr. Ceaglske, Mr. Stoppel, Mr. Stephenson, Mr. Madden.
- 301-302-303su.\* Research in Chemical Engineering. (Ar.) Grad. faculty in Chem. Eng.

## THIRD TERM

- 151-152su.\*†§ Chemical Manufacture. Semi-works manufacture of inorganic and organic chemical products. (3 cred. each; prereq. 103, 131; lab. daily 8 a.m. to 6 p.m., lect., rec., MTWThF I; 151 in 111C, 152 in 115C.) Mr. Ceaglske, Mr. Comley, Mr. Jackson, Mr. Madden.

## DRAWING

## FIRST AND SECOND TERMS

- 41-42-43su. Technical Drawing. General course in the theory and practice of freehand drawing. Perspective, sketching, rendering, lettering, and industrial drawing. Modification of this course of particular interest to dental, medical, and scientific students. (No cred. for tech. students; 2 cred. per course for others; no prereq. for course 41; 6 lab. hrs. per week.) Mr. Doseff.
- 81-82-83su. Advanced Drawing. Principles of design—traditional and modern. Layouts, composition, and illustration, scientific modeling. (3 cred. per course; prereq. Dr. 43 or equiv.; 8 lab. hrs. per week.) Mr. Doseff.
- 86-87su. Anatomical Drawing. (3 cred. per course; prereq. 43 or equiv.) Mr. Doseff.

† A fee of \$2 per quarter is charged for this course. The student should purchase a \$5 chemistry deposit card from the bursar, in the Administration Building. No student will be assigned a desk in the laboratory until he presents this card. The \$2 course fee, laboratory material, and breakage will be charged against the deposit.

§ Each laboratory section is limited to 16 students.



# COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

## GENERAL INFORMATION

Agriculture offers a limited number of courses to college undergraduates interested in this field, and a larger number of courses from most of the agricultural divisions for graduate students. For high school teachers of agriculture a number of graduate courses in technical agriculture and in education are available; special emphasis will be given to the problems in adult education.

The offerings in home economics are designed primarily for advanced undergraduate students and qualified graduate students. The courses listed represent the fields of foods and nutrition, related art, home management, textiles and clothing, and home economics education.

### GRADUATE STUDY

Opportunity is offered in the divisions of Agriculture and Forestry for graduate study either for the first six-week term of the Summer Session or for the entire session of eleven weeks. In some divisions both courses and thesis work may be carried for the entire session. In other divisions thesis or course work only may be pursued through the Summer Session. Information concerning graduate work during the summer, in any division, should be obtained from the head of the division and from the Graduate School. Thesis and problem work is correlated in most divisions with the work in the Experiment Station, and the facilities offered during the summer are in most divisions especially attractive because of the field work possible only at that time.

In Home Economics graduate course work is given in the first term only. Home Economics students are able to take courses in certain related fields in other departments.

Students intending to register for any phase of graduate work and who expect to obtain credit in the Graduate School should make arrangements through the proper committees and with the dean of the Graduate School and should register in that school. See page 15.

### ADMISSION

The undergraduate courses of the Summer Session subject to nonresident restrictions on page 10, are open to all registered students qualified to pursue the work to advantage, but college credit will be given only when college entrance requirements have been fulfilled.

For details of admission requirements, see the Bulletin of General Information.

An *asterisk* (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 16.)

## AGRICULTURAL BIOCHEMISTRY

### FIRST TERM

1su. Elementary Organic Chemistry. (5 cred.; soph., jr., sr.; prereq. Inorg. Chem. 1 and 2, or 4 and 5; MTWThF I-II; 113SnH.) Ar.

2su.‡ Quantitative Methods. (Page 70§) (5 cred.; soph., jr., sr.; prereq. Inorg. Chem. 1 and 2 or 4 and 5; limited to 32; MWF I-IX; 116SnH.) Mr. Bleidner.

118su. Laboratory Problems in Biochemistry. (Page 71§) (3 to 5 cred.; jr., sr., grad.; permission of instructor; ar.; ar.) Ar.

‡ A laboratory fee of \$2 is required for this course. A \$5 card (from which the \$2 fee will be deducted) is to be purchased from the cashier's office, University Farm, before a laboratory desk will be assigned.

§ College of Agriculture, Forestry, and Home Economics Bulletin.

- 120su. Proteins. (Page 71§) (3 cred.; jr., sr., grad.; prereq. 119 or permission of instructor; MWF I-II; 116SnH.) Mr. Sandstrom.
- 130su.¶¶ Proteins Laboratory. (Page 71§) (2 cred.; jr., sr., grad.; prereq. 2, parallel 120; MWF III-IV, TTh I, II, III, IV; 202, 208SnH.) Mr. Sandstrom.

## SECOND TERM

- 118su. Laboratory Problems in Biochemistry. (Page 71§) (3 to 5 cred.; jr., sr., grad.; permission of instructor; ar.; ar.) Ar.

## AGRICULTURAL ECONOMICS

## FIRST TERM

- 1su. Principles of Economics I. (Page 72§) (3 cred.; soph., jr., sr.; no prereq.; MTWThF I; 109HH.) Mr. Lowe.
- 102su. Farm Organization. (Page 72§) (3 cred.; jr., sr., grad.; prereq. Agr.Econ. 2; MTWThF II; 210HH.) Mr. Pond.
- 247su. Seminar in Research Methods. Study of procedures and research techniques applicable to marketing investigations. Organization of research in this field, important types of studies, and discussion of alternative methods of analysis. (3 cred.; grad.; prereq. Ag.Econ. 140 and 191; ar.) Mr. Waite.

## SECOND TERM

- 2su. Principles of Economics II. (Page 72§) (5 cred.; soph., jr., sr.; prereq. Ag.Econ. 1; MTWThF I-II; 109HH.) Mr. Lowe.
- 244su. Seminar in Cooperation. A study of the organization and management problems of cooperatives. Attention will be given to legal organization, taxation, financing, member and patron relations, sales, price, and patronage refund policies. Case studies of typical cooperatives in various commodity fields. (3 cred.; grad.; ar.) Mr. Koller.

## AGRICULTURAL EDUCATION

For list of courses in Agricultural Education see courses listed under the College of Education, page 103.

## AGRICULTURAL ENGINEERING

## FIRST TERM

- 40su.‡ Mechanical Training. Instruction and laboratory practice in mechanical trades embracing rope work, belt lacing and pulleys, cement work, soldering, electric wiring. (2 to 4 cred.; no prereq.; lect. TWThF VI; lab. ar.; 106, 20En.) (Limited to 40.) Mr. Dent.
- 41su.‡‡‡ Metal Work. Instruction and laboratory practice in mechanical trades embracing cold metal work, pipe fitting, oxyacetylene welding, brazing and cutting, and electric arc welding. Students may select any or all of above and concentrate on those of special interest. Special attention given to practical application and features of special interest to teachers. (2 to 4 cred.; no prereq.; lect. TWThF VII; lab. ar.; 106, 20En.) (Limited to 30.) Mr. Dent.

§ College of Agriculture, Forestry, and Home Economics Bulletin.

‡ A fee of \$1 is charged for this course.

‡‡ A laboratory fee of \$5 is required for each quarter of this course. The \$5 card purchased from the cashier's office, University Farm, must be presented before laboratory space will be assigned. A \$5 breakage card against which breakage can be charged must be purchased also.

‡‡‡ A fee of \$6 is charged for this course.

SECOND TERM

- 40su.‡ Mechanical Training. (See 40su First Term.) (2 to 4 cred.; no prereq.; lect. TWThF VI; lab. ar.; 106, 20En.) (Limited to 40.) Mr. Dent.
- 42su.‡‡‡ Art Metal Work. A course designed for persons interested in creating articles of permanent beauty and value from metals including copper, gal-alloy, brass, steel, aluminum, and silver. Forming of plates, bowls and trays, use of jewelers saw in pierced work; etching; soldering; making candlesticks, book ends, desk sets, lamps, and bracelets. Students may choose any projects and metals. (2 to 4 cred.; no prereq.; lect., TWThF VII; lab. ar.; 106, 20En.) (Limited to 20.) Mr. Dent.

AGRONOMY AND PLANT GENETICS

FIRST AND SECOND TERMS

AGRONOMY

- 201su.\* Research in Farm Crops. (Page 37†) (3 to 9 cred.; prereq. 121, 123; grad.; ar.) Mr. Dunham, Mr. Schmid.

PLANT GENETICS

- 241su.\* Research in Plant Genetics. (Page 37†) (Grad.; ar.) Mr. Burnham, Mr. Hayes, Mr. Rinke.
- 244su. Laboratory Methods in Plant Breeding. (Page 37†) (3 cred.; grad.; ar.) Staff.

ANIMAL AND POULTRY HUSBANDRY

FIRST TERM

ANIMAL HUSBANDRY

- 56su. Livestock Feeding. A study of the nutritional requirements of farm animals and the composition and characteristics of livestock feeds. The value of individual feeds and of combinations of feeds for beef cattle, sheep, swine, and horses. (3 cred.; jr., sr.; prereq. An.Husb. 1; MWF III-IV; 3LsPav.) Mr. Anderson.
- 213su.\* Research in Animal Husbandry. Special problems assigned to students to be worked out under the supervision of a faculty member. (3 cred.; grad.; ar.) Mr. Peters, Mr. Ferrin, Mr. Winters.

POULTRY HUSBANDRY

- 1su. Poultry Production. An introduction to the poultry industry and the principals underlying farm flock management. (4 cred.; soph.; no prereq.; MTWThF I-II; 103Ve.) Mr. Canfield.
- 214su.\* Research in Poultry Husbandry. Special problems assigned to students to be worked out under supervision of a faculty member. (3 cred.; grad.; ar.) Mr. Sloan.

SECOND TERM

ANIMAL HUSBANDRY

- 57su. Livestock Feeding. Continuation of An.Husb. 56. (3 cred.; jr., sr.; prereq. 1; MWF III-IV; 3LsPav.) Mr. Anderson.
- 112su. Animal Breeding. The application of the physiology of reproduction and genetics to the breeding of farm animals. (3 cred.; jr., sr.; prereq. Agron. 31; MWF I-II; 3LsPav.) Mr. Winters.
- 213su.\* Research in Animal Husbandry. (Same as First Term.)

† For description see Graduate School Bulletin.

‡ A fee of \$1 is charged for this course.

‡‡‡ A fee of \$3 is charged for this course.

## POULTRY HUSBANDRY

214su.\* Research in Poultry Husbandry. (Same as First Term.)

## DAIRY HUSBANDRY

## FIRST AND SECOND TERMS

- 208su. Research in Dairy Production. (Page 65†) (Prereq. preliminary grad. work.)  
Mr. Fitch, Mr. Petersen, Mr. Gullickson, Mr. Gilmore.
- 209su. Research in Dairy Manufacturing. (Page 65†) (Prereq. preliminary grad. work.)  
Mr. Combs, Mr. Coulter.
- 215su. Research in Dairy Bacteriology. (Page 65†) (Prereq. preliminary grad. work.)  
Mr. Macy, Mr. Olson.

## ENTOMOLOGY AND ECONOMIC ZOOLOGY‡

## FIRST TERM

- 5su. Economic Entomology. The life histories, habits, and methods of control of the insect pests of orchard, field, and garden. Laboratory work in the determination of the more important forms. (5 cred.; soph., jr., sr.; prereq. Zool. 14-15 or equiv.; lect. MTWTh VI, F VI-VII; lab. MTWTh VII-VIII-IX; 301Ad.) Ar.
- 13su. Field Zoology. Offered at Itasca Park. (1½ cred.; fr.; no prereq.) Mr. Dawson, Mr. Peters.

## FIRST AND SECOND TERMS

- 197su. Introduction to Research. Preparation for investigational work in lines of entomology. Advanced laboratory, field, and library work; training in the preparation of bibliographies and manuscripts; special problems. (2½ or more cred.; jr., sr., grad.; prereq. 9 hrs. ent., and other prescribed work; ar.; Ad.) Mr. Mickel, Mr. Granovsky, Mr. Haydak, Mr. Hodson, Mr. Marshall, Mr. Richards, Mr. Burroughs.
- 204su. Research in Entomology. Ample opportunity for research work in various phases of entomology will be afforded properly qualified students. This work will be individual. Students who plan to undertake special problems should correspond with the division relative to methods of collection and preparation of material. (3 or more cred.; grad.; ar.) Mr. Mickel, Mr. Granovsky, Mr. Haydak, Mr. Hodson, Mr. Marshall, Mr. Richards, Mr. Burroughs.

## FORESTRY‡

## FIRST TERM

(Offered at Itasca Park. Open only to students who have completed at least two quarters of forestry, or one year in a junior college, or other college. Preparatory courses in botany, dendrology, and zoology are desirable. The schedule is so arranged as to occupy the student's full time for 5½ days per week. Largely field or laboratory work.)

- For.5su. Field Silviculture. (Pages 89-90§) (1½ cred.; no prereq.) Ar.
- For.6su. Field Mensuration. (Page 89-90§) (1½ cred.; no prereq.) Mr. Brown and teaching assistant.
- For.11su. Camp Management. (Page 89-90§) (1 cred.; no prereq.) Mr. Brown and teaching assistant.
- Ent.13su. Field Zoology. (See also under Entomology and Economic Zoology.) (1½ cred.; no prereq.) Mr. Dawson.
- Bot.6su. Field Botany. (See under Botany.) (1½ cred.; no prereq.) Ar.

† For description see Graduate School Bulletin.

‡ For additional courses see Itasca Park Biological Station, page 78.

§ See College of Agriculture, Forestry, and Home Economics Bulletin, 1945-47.

## HOME ECONOMICS

## FIRST TERM

- 27su. Related Art Problems. Problems worked out relating to costume and house furnishing design. (3 cred.; jr., sr.; prereq. H.E. 21; MTWThF IV-V and 2 hrs. ar.; 112HE.) Miss Vetta Goldstein.
- 40su. 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.; fr.; TWTh II-III-IV, MF III; 207HE.) Miss Francis.
- 45su. Quantity Cookery. Application of the principles of cookery to large quantity preparation; planning of meals for dining hall, cafeteria and tearoom; a study of standardized formulae and production costs. (6 cred.; jr., sr.; prereq. H.E. 40; MTWThF I-V; Cafeteria.) Miss Ames.
- 50su. Textiles. A study of textile materials from the standpoint of the consumer. Discussions will include the characteristics of cotton, flax, wool, silk, rayon, nylon, casein, and other modern fibers and fabrics; the use of fundamental textile information as an effective tool in the selection and maintenance of textile products for clothing and home furnishing; the structure, design, and modern finishing of fabrics, factors which determine serviceability in fabrics and their recognition. Laboratory study of selected fabrics will parallel class discussions. (3 cred.; jr., sr.; prereq. H.E. 1 or permission of the instructor; MTWThF IV-V and 2 hrs. ar.; 305HE.) Miss Phelps.
- 86su. Home Management: Laboratory. Residence in one of the home management houses involving experience in sharing and managing the homemaking activities and responsibilities for the group. (4 cred.; jr., sr.; prereq. H.E. 85 or parallel, H.E. 40, H.E. Ed. 90, P.H. 52a,b.) Miss Studley, Miss Hurst, and others.
- 116su. Family Clothing Problems. The buying of clothing, the simplification of clothing, the labeling and standardization of clothing, the sizing of garments and patterns, recent developments in the choice of clothing for specific uses. (3 cred.; jr., sr.; prereq. H.E. 27, H.E. 50; MTWThF VII and 1 hr. ar.; 305HE.) Miss Phelps.
- 120su. Art History and Appreciation. The historical development of painting, sculpture, architecture, decoration, furniture, and costumes, studied with special emphasis on design and influence upon modern styles. (3 cred.; jr., sr., grad.; MTWThF I and 1 hr. ar.; 112HE.) Miss Vetta Goldstein.
- 140su. New Developments in Food Preparation. Demonstrations, discussions, and some laboratory work illustrating recent trends in food preparation. Such topics as the following will be included: The use of pressure saucepans, the theory and practice of freezing foods, and comparisons of recently proposed quick methods of preparing cakes and yeast breads with conventional methods. (3 cred.; jr., sr., grad.; prereq. H.E. 40 or equiv.; MWThF VI, T VI-VIII; 213, 107HE.) Miss Morley.
- 142su. Experimental Cookery. An intensive study of problems in foods and food preparation. Individual laboratory problems, adapted to student's specific food interests. (3 cred.; jr., sr., grad.; prereq. H.E. 40 or equiv., Agr.Biochem. 4 or equiv.; MTWThF I-II and 2 hrs. ar.; 107HE.) Miss Morley.
- 172su.¶ Current Developments in Nutrition. This course aims to provide subject matter which is fundamental in the solution of nutrition problems currently met in feeding families or larger groups of people. The course will include topics such as the place of various nutrients in good nutrition; the interrelationships among nutrients; dietary allowances; the conservation of the nutritive values of foods; and the role of amino acids and proteins in health and abnormal conditions; as well as other material essen-

¶ This course may be substituted for H.E. 170 which is required in some home economics curricula.

- tial to an understanding of modern nutrition. (3 cred.; jr., sr., grad.; prereq. H.E. 31, H.E. 40, Agr.Biochem. 4, Physiol. 4 or consent of the instructor; MTWThF IV and 1 hr. ar.; 213HE.) Miss Biester.
- 179su. Readings in Nutrition. This course aims to acquaint students with some of the work of outstanding nutrition research workers and teachers and with periodicals and authoritative books on nutrition and allied fields written for various purposes and serving different groups of readers. Individually assigned readings as well as oral and written reports will be included in the course. (2 cred.; jr., sr., grad.; prereq. H.E. 170 or equiv.; MTWTh VII; 213HE.) Miss Biester.
- 180su. Home Planning and Furnishing. Problems in selecting a home and prolonging the life of the house and its furnishings. Stresses intelligent planning and furnishing of the home on the basis of family living. (5 cred.; jr., sr.; prereq. H.E. 27, H.E. 120 recommended; MTWThF II-III-IV-V; 303, 304 and 313HE.) Miss Harriet Goldstein.
- 186su. Problems in Income Management. An intensive study of problems relating to individual and family budgets. Readings, discussions, and field work. (3 cred.; prereq. H.E. 85 or parallel, H.E. 86 or parallel, H.E. 34 or equiv., Agr.Econ. 126 or parallel; MTWThF V and 1 hr. ar.; 213HE.) Miss Studley.
- 279su.\* Seminar in Nutrition. Opportunity is afforded for reading, evaluating, and reporting recent pertinent literature on selected nutrition topics with a view of facilitating the application of new and sound information to everyday nutrition problems of interest to, or selected by the student. (1 cred.; grad.; prereq. consent of the instructor; ar.; ar.) Miss Biester.
- 295su. Home Economics Problems. Investigation of selected problems in the field of related art. (1 cred.; grad. only; prereq. permission of instructor; ar.; ar.) Miss Harriet Goldstein.

#### SECOND TERM

- 85su. Home Management: Operation and Maintenance, Lectures. Discussion of the management aspects of homemaking with emphasis on the problems involved in the use of time, energy, and money. (4 cred.; jr., sr.; prereq. H.E. 40, H.E.Ed. 90 or parallel; MTWThF IV and 1 hr. ar.; 213HE.) Miss Jeary.
- 86su. Home Management: Operation and Maintenance, Laboratory. Same as first term. (4 cred.; jr., sr.; prereq. H.E. 40 or parallel, H.E. 85, C.W. 40 or H.E.Ed. 90; hrs. ar.) Miss Jeary, Miss Hurst, and others.

#### HOME ECONOMICS EDUCATION

See Home Economics Education, College of Education, page 113.

#### HORTICULTURE

##### FIRST AND SECOND TERMS

- 190-191-192su. Special Problems. (2 to 4 cred.; jr., sr., grad.; ar.; Hr.) Mr. Alderman, Mr. Brierley, Mr. Krantz, Mr. Currence, Mr. Wilcox, Mr. Hutchins.
- 247su.\* Reports on Special Horticultural Topics. (9 cred. or less.) Mr. Alderman, Mr. Brierley, Mr. Krantz, Mr. Currence, Mr. Wilcox, Mr. Hutchins.

#### PLANT PATHOLOGY AND BOTANY¶

##### FIRST AND SECOND TERMS

- 206su.\* Research in Plant Pathology. (Page 147† description for Course 203-204-205.) (Cred. ar.; grad.; PP.) Mr. Stakman, Mr. J. J. Christensen, Mr. Eide, Miss Hart, Mr. C. M. Christensen, Miss Dossdall, Mr. Kernkamp, Mr. Mader.

† See Graduate School Bulletin

¶ For additional courses see Itasca Park Biological Station, page 78.

- 210su.\* Research in Mycology. (Page 147†) (Cred. ar.; grad.; prereq. 105-106-107; PP.)  
Mr. Stakman, Mr. C. M. Christensen, Miss Dosdall.
- 257su.\* Research Problems in Applied Plant Physiology. (Page 148†) (Cred. ar.; grad.;  
AgrBot.) Mr. Landon.
- 263su.\* Research Problems in Agricultural Botany. (Page 148†) (3 to 5 cred.; grad.;  
AgrBot.) Mr. Larson, Mr. Stakman.

RHETORIC

FIRST TERM

- 1su.‡ Communications I. Diagnostic tests in listening, reading, speaking, writing. Sectioning and specialized training according to individual needs. Core assignments integrating the use of all four skills. Progress tests. Re-examination to determine what further training in communication is needed for attainment of the level of proficiency required of our college freshmen. (3 cred.; all; no prereq.; Sec. 1, MTWThF I, 311En, Mr. Nichols; Sec. 2, MTWThF I, 307En, Mr. Humphrey.)
- 2su. Communications II. Expository communication. Balanced training in adapting the four communication skills to the presentation and assimilation of oral and written materials of expository nature. Note-taking, outlining, written papers, oral reports. (3 cred.; all; prereq. placement test; MTWThF I; 306En.) Mr. Seidenkranz.
- 3su. Communications III. Persuasive communication. Balanced training in adapting the four communication skills to the presentation and critical analysis of oral and written materials of a persuasive nature. Argument, evidence, and the techniques of documentation. Brief writing and persuasive speaking. (3 cred.; all; prereq. placement test; MTWThF I; 312En.) Mr. Brown.
- 22su.‡ Public Speaking. A practical course in the fundamentals of speech making. Particular emphasis upon organizing the speech and projecting it to the audience. (3 cred.; soph., jr., sr.; prereq. satisfaction of the freshman communications requirement; MTWThF III; 311En.) Mr. Nichols.
- 33su. American Life in American Literature. A careful examination of the works and influence of ten preeminent contributors to our national literature. (3 cred.; soph., jr., sr.; prereq. satisfaction of freshman communications requirement; MTWThF IV; 307En.) Mr. Seidenkranz.
- 51su. Exposition. Essays and articles; technical writing; application letters; review of English usage. (3 cred.; jr., sr.; prereq. satisfaction of freshman communications requirement; MTWThF IV; 312En.) Mr. Brown.

SECOND TERM

- 1su.‡ Communications I. Same as First Term. (3 cred.; all; no prereq.; MTWThF I; 306En.) Mrs. Jasper.
- 2su. Communications II. Same as First Term. (3 cred.; all; prereq. placement test; MTWThF I; 312En.) Miss Thurston.
- 3su. Communications III. Same as First Term. (3 cred.; all; prereq. placement test; MTWThF I; 311En.) Mr. Drake.
- 22su.‡ Public Speaking. Same as First Term. (3 cred.; soph., jr., sr.; prereq. satisfaction of freshman communications requirement; MTWThF III; 311En.) Mr. Drake.
- 51su. Exposition. Same as First Term. (3 cred.; jr., sr.; prereq. satisfaction of freshman communications requirement; MTWThF IV; 312En.) Miss Thurston.

† See Graduate School Bulletin.

‡ A fee of \$1 is charged for this course.

## SOILS

## FIRST AND SECOND TERMS

- 104su. Soil Mapping. (Page 112§) (3 cred.; jr., sr., grad.; prereq. 108; must obtain permission of instructor in advance of registration; ar.) Mr. McMiller.
- 202su. Research Problems in Soils. (Page 171†) (2-5 cred.; grad.; prereq. 107; must obtain permission of instructor in advance of registration; ar.) Mr. Rost, Mr. McMiller, Mr. Caldwell, Mr. MacGregor.

## BIOLOGICAL STATION SUMMER SESSION

During the second term of the Summer Session an excellent opportunity for the study of terrestrial and fresh-water biology in its most fundamental aspects is presented by the Biological Station of the University of Minnesota, located at Itasca Park.

These classes will be conducted co-operatively by various departments in the College of Agriculture, Forestry, and Home Economics and the College of Science, Literature, and the Arts. Classes will be held at the station beginning July 28, ending August 29.

## GENERAL INFORMATION

Courses are designed to provide opportunity for instruction and research and to train scientific investigators in the fields of terrestrial and fresh-water biology. The station affords an excellent opportunity for study of the flora and fauna found in the midwestern and lake states region.

Elementary courses are available in field botany, field entomology, wild-life conservation, field mycology, etc., of special interest to high school teachers and others interested in conservation and the teaching of conservation.

Field trips and indoor laboratory work are given on designated days. In the field the student visits typical habitats and gathers specimens for laboratory study, supplemented by informal lectures by instructors in charge of each tour. The same scholastic standards are maintained at the station as on the campus of the University of Minnesota and college credit is given for work satisfactorily completed.

The interested students may find the following opportunities offered by the Biological Station at Itasca Park:

1. Elementary and advanced instruction during the five weeks of the second term of the University Summer Session (July 28 to August 29) for college undergraduates, graduate students, high school and nature study teachers, and others interested.
2. Opportunities for graduate students who may wish to pursue biological investigation in the lakes, fields, or forests close to the station.
3. Opportunities for teachers of botany, zoology, and biology, as well as for guest investigators for independent research in terrestrial and fresh-water biology.

## FEES AND EXPENSES

Registrations will be accepted during June and July but not later than July 28. The following fees are payable by each registrant on or before July 28 and must be paid before registration is completed:

Tuition fee .....	\$25.80
Incidental fee .....	6.00
General deposit fee .....	2.00
Equipment fee .....	5.00
Dormitory and dining hall fee.....	5.00

Total fees for the term..... \$43.80

§ See College of Agriculture, Forestry, and Home Economics Bulletin.

† See Graduate School Bulletin.



In addition it is estimated on the basis of the experience of other groups of students that the cost of board will not exceed a total of \$50 for the five weeks. No additional charge is made for room in the dormitories and cabins of the Biological Station.

Charges for lockers, laboratory breakage, library fines, etc., will be deducted from the \$2 deposit and the balance will be refunded by mail after the close of the term.

Equipment fees include the use of microscopes, nets, boats, various class supplies, and accessories.

The estimated cost of \$93.80 for the five-week session does not include traveling expenses, clothing, laundry, and minor incidental personal expenses.

Tuition and fees are payable on or before July 28. After July 28 the late registration fee will be charged according to the following schedule:

Tuesday, July 29 .....	\$2.00
Wednesday, July 30 .....	3.00
Thursday, July 31 .....	4.00
Friday, August 1 .....	5.00

No registration will be accepted after August 1 without the approval of the professor in charge and payment of a \$5 fee.

ADMISSION

The courses in the Biological Station are open to all qualified graduate and undergraduate students who have had usual preliminary courses in biological subjects, as well as to qualified high school graduates. Certain courses are especially designed for the teacher of biological subjects in colleges, high schools, and public schools, and for others interested in plant and animal life.

Inquiries concerning the Biological Station should be directed to the Chairman, Itasca Committee, College Office, University Farm, St. Paul 1, Minnesota.

Applications for registration for graduate students will be handled through the office of the Chairman of the Itasca Committee who will forward them to the Dean of the Graduate School for approval. The applicant will then be informed of the status of his eligibility for admission to both the Graduate School and the Biological Station.

For the 1947 session, not more than one hundred (100) applicants can be admitted, and the priority of registration will govern admission.

An *asterisk* (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 16.)

SECOND TERM OF SUMMER SESSION

The courses to be given at the Biological Station will begin July 28 and close August 29. Special arrangements will be made for those whose school or other duties make it impossible to remain through the final week of the session.

The following courses are offered in the Biological Station for the year 1947 at Itasca Park during the second term of the Summer Session.

BOTANY

8su. Elements of Field Taxonomy. The identification of common wild flowers, and a general study of the classification and relationship of flowering plants. Field work in forest, swamp, bog, lake, and prairie. Text: Moyle, *Field Key to the Common Non-Woody Flowering Plants and Ferns of Minnesota*, Gray's *New Manual of Botany*. (4 cred.; prereq. Bot. 1, or consent of instructor; WS.) Mr. Buell.

- 112su. Aquatic Flowering Plants. A study of the higher plants of aquatic and marsh habitats. Identification and collection; association of species; relations to the habitat; adaptive morphology and food value to wildlife. (4 cred.; prereq. bot. or zool. 10 cred., or consent of instructor; WS.) Mr. Anderson.
- 116su. Summer Flora of Minnesota. A survey of the summer flowering plants and ferns of the state with particular reference to the local flora. Collection and identification of species; distribution in Minnesota; literature and taxonomic methods. Text: *Gray's New Manual of Botany*. (4 cred.; prereq. Bot. 8, or consent of instructor; TF.) Mr. Anderson.
- 135su. Field Research Methods in Ecology. An advanced course in field ecology dealing chiefly with methods of studying community characteristics, rate of vegetational change, and the technique of measuring environmental influences. (4 cred.; prereq. Bot. 18 cred. incl. Bot. 50 or equiv.; MTh.) Mr. Buell.
- 170su. Bryophytes and Pteridophytes. Field and laboratory study of the mosses, liverworts, ferns and fern allies of Minnesota. Texts: Conard, *How to Know the Mosses; The Ferns and Fern Allies of Wisconsin* (obtainable from the Department of Botany, University of Wisconsin). (4 cred.; prereq. 10 cred. of biology, or consent of instructor; MTh.) Mr. Evans.
- 176su. Freshwater Algae. The taxonomy and limnological relations of the fresh-water algae of Minnesota. Text: Smith, *Fresh-water Algae of the U. S.* (4 cred.; prereq. 10 cred. of biology, or consent of instructor; TF.) Mr. Evans.
- 196su. Problems in Ecology, Taxonomy, Bryology, or Algology. Advanced studies based on individual field work and research. (Cred. ar.; adv. students with proper qualifications.) Mr. Anderson, Mr. Buell, Mr. Evans.

#### ENTOMOLOGY AND ECONOMIC ZOOLOGY

- 59su. Field Entomology. A study of the insect fauna in various natural habitats of the park and surrounding areas. The course includes field trips, collection and classification of insects, as well as studies of general morphology, life histories, and habits of local species under ecological conditions governing the distribution of insect fauna of the region. Text: Lutz, *Field Book of Insects*. (4 cred.; jr., sr.; prereq. Zool. 1-2-3 or equiv.; TF.) Ar.
- 68su. Natural History of the Higher Vertebrates. Life histories, habits, economic importance, and identification of amphibians, reptiles, birds, and mammals, with special reference to the local species. Texts: Peterson, *A Field Guide to the Birds*; Swanson, Surber, and Roberts, *The Mammals of Minnesota*; Breckenridge, *Reptiles and Amphibians of Minnesota*. Dissecting set. (4 cred.; prereq. Zool. 1-2-3 or equiv.; TF.) (Charges for car mileage for field trips in this course will average \$1 to \$2.) Mr. Marshall.
- 76su. Techniques of Field Biology. A study of available flora and fauna including the methods of collection, preservation, arrangement, and demonstration of illustrative material and effective presentation to classes. Lectures, laboratory, and field work. This course is primarily designed to meet the needs of teachers of biological subjects. Text: Miller and Blaydes, *Methods and Materials for Teaching Biological Sciences*. (4 cred.; prereq. bot. or zool. 10 credits or consent of instructor; WS.) Mr. Peters.
- 162su. Ecology of Terrestrial Vertebrates. Detailed studies of the ecological relationships of Northern Minnesota terrestrial vertebrates. Texts: same as course 68 and Elton, *Animal Ecology*. Lectures, laboratory, and field work. (4 cred.; prereq. Ent. 68 or Zool. 46-47, and Ent. 163 or equiv. and Bot. 20; MTh.) (Charges for car mileage for fields trips in this course will average \$1 or \$2.) Mr. Marshall.

- 196su.\* Special Problems in Entomology and Economic Zoology. Advanced work in entomology and economic zoology and ample opportunity for individual research, especially in various phases of faunistic studies in terrestrial, aquatic, and forest entomology and economic zoology. (Cred. ar.; adv. students with proper qualifications.) Mr. Marshall.

## FORESTRY

- 12su. Field Dendrology. Trees and shrubs found in the Itasca Park Region, with special reference to identification by means of constant characters. (Not open for credit to students in forestry.) Text required: Rosendahl and Butters, *Trees and Shrubs of Minnesota*. (4 cred.; prereq. 10 cred. in bot., or consent of instructor; WS.) Mr. Buell.

## PLANT PATHOLOGY AND BOTANY

- 50su. Field Mycology. Collection and identification of the common fleshy fungi, molds, and plant parasites. Techniques given for the growing of fungi in natural and artificial media. Field collection, laboratory work, and lectures. (4 cred.; prereq. 9 cred. of bot. or permission of instructor; MTh.) Mr. C. M. Christensen.
- 210su.\* Special Problems in Mycology. Research work along the following suggested lines: taxonomy of natural groups, fungus flora of particular regions, localities, or habitats; morphology or physiology of special forms. (Cred. ar.; grad.; prereq. 105-106-107.) Mr. C. M. Christensen.

## ZOOLOGY

- 55su.‡ Natural History of Invertebrates and Fishes. A taxonomic and ecological survey of the local fauna, including life histories and habitats. Text: Eddy and Hodson, *Taxonomic Keys of the Common Animals of Minnesota*. (4 cred.; prereq. Zool. 1-2-3 or equiv.; WS.) Mr. Eddy.
- 115su.‡ Advanced Natural History of Invertebrates and Fishes. An advanced taxonomic and ecological survey of the local fauna including a detailed and independent ecological study of several taxonomic groups. Text: Eddy and Hodson, *Taxonomic Keys to the Common Animals of Minnesota*; Ward and Whipple, *Fresh-Water Biology*. (4 cred.; prereq. 15 cred. in zool.; WS.) Mr. Eddy.
- 116su.‡ Limnology. A study of the conditions of life and the distribution of organisms in lakes of the Itasca region. Text: Welch, *Limnology*. (4 cred.; prereq. 15 cred. in zool.; MTh.) Mr. Eddy.
- 143su.‡ Animal Parasites. Parasites of local fauna with special reference to helminths. (4 cred.; prereq. 15 cred. in zool. or consent of instructor; TF.) Mr. Chandler.
- 198su. Problems in Parasitology, Ecology, and Limnology. Principles and further work in special lines adapted to needs of individual students. (Cred. ar.; prereq. Zool. 1-2-3 and special requirements; adv. students.) Mr. Eddy, Mr. Chandler.

‡ A fee of \$1.50 is charged for this course.

## LAW SCHOOL

The Law School will offer a complete quarter (June 17 to August 29) of law work with courses for both beginning and advanced students. Registration will be for the quarter, not for the single term. Courses offered are:

### FIRST YEAR COURSES

#### *First and Second Terms*

Agency. (6 cred.) Mr. Kinyon.

Property I. (9 cred.) Ar.

### SECOND YEAR COURSES

#### *First and Second Terms*

Constitutional Law. (6 cred.) Mr. Rottschaefer and Mr. Lockhart.

Equity II. (6 cred.) Mr. McClintock.

Insurance. (3 cred.) Mr. McClure.

### ADVANCED COURSES

#### *First and Second Terms*

Conflict of Laws. (6 cred.) Mr. Read.

Damages. (3 cred.) Mr. Mussman.

Equity III. (3 cred.) Mr. Mussman.

Modern Social Legislation. (6 cred.) Mr. Riesenfeld.

Mortgages. (3 cred.) Mr. Bade.

Wills. (3 cred.) Mr. Bade.

Tuition fees for the quarter are: resident, \$42; nonresident, \$71. Credit hour fee: resident \$3.50; nonresident, \$6. There will be the usual incidental fee of \$10.65 for the Coffman Memorial Union, the Health Service, the *Minnesota Daily*, etc. Deposit fee for the summer quarter only, \$2.00.

# MEDICAL SCHOOL

## GENERAL INFORMATION

### GENERAL

Any of the courses offered by the departments of the Medical School (except section clinics of limited registration) are open to any student in the Summer Session, who has the necessary preparation to benefit therefrom, provided room is available in the classes.

Medical classes of the Summer Session, 1947, will begin on June 18.

Students applying to register in pre-clinical subjects for the purpose of making up deficiencies incurred at other medical schools should present, at the time of application for such registration, a letter from the dean of their medical school approving the purpose of such application.

### FEES—MEDICAL STUDENTS

The Medical School tuition fee for a full Summer Session is \$77 for residents of Minnesota, and \$150 for nonresidents. Less than a full program may be paid for on a credit hour basis, namely \$6.50 per credit hour (nonresidents \$12.50). In addition each student will pay the incidental fee of \$10.65 and a deposit of \$5. Students in certain courses are required to furnish microscopes.

Term fees are one half the quarter fees. Laboratory fees are not required under this plan. The schedule of total fees will therefore be:

	Per Quarter	Per Term
Tuition fee .....	\$77.00 (\$150.00)	\$38.50 (\$75.00)
Incidental fee .....	10.65	5.33
Deposit .....	5.00	5.00

Fees must be paid on the above basis by all who elect the program of clinical subjects in the senior medical year; and by all who desire time credit on the medical course in this or any other medical school.

### FEES—SUMMER SESSION STUDENTS

Students who do not desire to register for time credit toward a medical degree or for a program of clinical subjects may pay on the above basis; or at their option they may pay the regular Summer Session fee of \$31.80 per term, plus special course fees as indicated in course descriptions, and a \$2 deposit.

### CLINICAL YEARS

The Medical School offers a full regular program during the summer quarter of each year. In order to receive legal time credit toward the degree of doctor of medicine or bachelor of medicine in this institution, students must be matriculated in the Medical School; see the Bulletin of the Medical School for requirements for admission and regulations governing advanced standing. Medical students from other schools who desire to enter for the summer only may do so as adult special students, receiving subject credit only. If such students desire legal time credit toward a medical degree, they should make arrangements with the institution from which they intend to take the degree. No obligation to accept such students into regular classes at this school is attached to adult special registration. Such students from other medical schools may take one of the programs listed below (except section clinics if already full) or, provided there is room in the classes, make up a special program from the courses offered. Admission to any course is conditioned upon the limit set by the department concerned.

Students from other institutions should consult the Bulletin of the Medical School to determine to what extent the courses listed fulfill their respective needs. They should

consult the deans or department heads in their own schools as to equivalence of the courses offered at the University of Minnesota.

#### PROGRAMS FOR CLINICAL (JUNIOR AND SENIOR) YEARS

The courses offered in the clinical years are as follows :

The didactic and clinical courses for one regular quarter are offered in the Summer Session, and all of the regular students will be in attendance. Students of other schools who desire to extend their clinical knowledge may register for the courses offered *if there is room in the classes.*

#### LABORATORY YEARS

Regular programs for freshman or sophomore medical students are offered. These courses may be taken by properly prepared students from other institutions as adult special students, without matriculation in the Medical School, if there is room in the classes. Students who desire to secure time credit toward the degree of doctor or bachelor of medicine in this school must matriculate and secure written consent from the officers of the school from which they expect to receive their medical degrees.

#### OPPORTUNITY FOR PRACTITIONERS

Attention is called to continuation courses offered from time to time throughout the year under the General Extension Division and the Center for Continuation Study. These courses are exclusively for practitioners and are largely practical in nature. Circulars may be obtained from the Center for Continuation Study.

The regular clinics in the University of Minnesota Hospitals and Dispensary, the Minneapolis General Hospital, the Ancker Hospital, Glen Lake Sanatorium, and the Wilder Dispensary, St. Paul, will go on as usual during the Summer Session, and will be open to visiting physicians.

#### ELECTIVES

Various electives will be offered in the laboratory and clinical departments. See departmental statements in this bulletin and also special Summer Session programs of the Medical School for details.

#### GRADUATE COURSES

Attention is called to opportunities offered in Medical School departments to work during the Summer Session for advanced degrees, either in laboratory or clinical branches. Such work involves admission to, and registration in, the Graduate School. For detailed information see the statement under "Graduate School" in this bulletin or the special bulletin on graduate work in medicine.

A special program of courses has been arranged through the Center for Continuation Study for medical officers returning to civilian life from military service and a limited number of others. A limited number of such physicians may live at the Center for Continuation Study. Classes will be held in the Center and at the Medical School; University of Minnesota Hospitals; Minneapolis General Hospital; Ancker Hospital, St. Paul, and affiliated institutions.

#### ANATOMY

##### FIRST TERM

165su.† Hematology. For medical technologists and others. Enrolment limited. Lecture and laboratory work. (4 cred.; prereq. Anat. 103 or equiv.; MWTs II-IV, F VI-VIII; 213 IA.) (Microscope fee \$6.) Dr. Sundberg and assistants.

† Microscope required. Students (except non-veteran medical) may obtain use of microscope by purchasing two \$3 microscope cards from bursar.

FIRST AND SECOND TERMS

- 103su.‡ Human Histology. For freshman medical students. Enrolment limited. Lecture and laboratory work. (9 cred.; prereq. Anat. 100-101; MTWTh VI-IX; 102, 213-215 IA.) (Microscope fee \$6.) Dr. Rasmussen, Dr. Kirschbaum, Dr. Hartmann, Dr. Williams, and assistants.
- 107su.†† Human Embryology. For freshman medical students. Enrolment limited. Lecture and laboratory work. (6 cred.; prereq. Anat. 100-101; TF I-III, Th I; 213-215 IA.) (Microscope fee \$6.) Dr. Wells, Dr. Hartmann, and assistants.
- 134su. Anatomy of Newborn. Enrolment limited to 12. (3 cred.; prereq. Anat. 100-101, 107; hrs. ar.; 14 IA.) Dr. Wells.
- 150su. Special Topics in Neurology. Study of literature on selected phases of human neurology. (Cred. ar.; prereq. Anat. 111; hrs. ar.; 217 IA.) Dr. Rasmussen.
- 156su.‡‡ Advanced Anatomy. Individual problems in gross anatomy, histology, hematology, embryology, or neurology. Permission of instructor required. (Cred. and hrs. ar.) Dr. Boyden, Dr. Rasmussen, Dr. Kirschbaum, Dr. Wells, Dr. Hartmann, Dr. Sundberg, Dr. Williams.
- 204su. Research in Anatomy. (Gross anatomy, histology, hematology, embryology, or neurology.) Permission of instructor required. (Cred. and hrs. ar.) Dr. Boyden, Dr. Rasmussen, Dr. Kirschbaum, Dr. Wells, Dr. Williams.

BACTERIOLOGY AND IMMUNOLOGY

FIRST TERM

- 53su.‡‡‡¶ General Bacteriology. (Page 16†) (5 cred.; prereq. general chemistry and biology; MTWThF VI, VII, VIII.) Dr. Green, Dr. McLimans.
- 114su. Molds, Yeasts, and Actinomycetes. (Page 16†) (4 cred.; prereq. Bact. 53; MTThF II, III, IV.) Dr. Skinner.
- 201su. Research in Bacteriology. (Page 16†) (Cred. and hrs. ar.) Dr. Green, Dr. Skinner.

SECOND TERM

- 116su.‡‡‡ Immunity. (Page 16†) (3 cred.; prereq. Bact. 53 or 101; TWThF VI, VII.) Dr. McLimans.
- 201su. Research in Bacteriology. (Page 16†) (Cred. and hrs. ar.) Dr. Green, Dr. McLimans

MEDICINE

FIRST AND SECOND TERMS

DIVISION OF INTERNAL MEDICINE

*Required Courses*

- 18-19su. Principles of Medical and Surgical Nursing.
- 104su. Introduction to Internal Medicine. Systematic lectures and clinics in the field of internal medicine. Junior year. (6 cred.; 22 hrs. per qtr., 66 hrs. total; prereq. Med. 101, 102.) Dr. Watson and staff.
- 111su. Clinical Clerkship in Medicine. Individual work in the medical wards of the University Hospital, taking and recording of case histories, making of physical examinations, and carrying out assigned laboratory work. Clerks are held responsible for

† Page numbers refer to Medical School Bulletin for 1943-45, where further information may be found.

†† Microscope required. Students (except non-veteran medical) may obtain use of microscope by purchasing two \$3 microscope cards from Bursar.

‡ Microscope required. Students (except non-veteran medical) may obtain use of microscope by purchasing \$3 microscope cards from bursar.

‡‡ A fee of \$7.50 is charged for this course. Microscope required. Students (except non-veteran medical) may obtain use of microscope by purchasing two \$3 microscope cards from bursar.

‡‡‡ A fee of \$1 per credit is charged for this course.

‡‡‡‡ A fee of \$1.50 is charged for this course.

history and course of disease as well as a detailed knowledge of the treatment given to patients assigned them. Junior year. (6 cred.; 260 hrs.; prereq. clear record in all prior subjects.) Dr. Watson and staff.

111xsu. Same as Course 111. (Minneapolis General Hospital.) Dr. Fahr and staff.

112su. Senior Clerkship in Internal Medicine (Admissions). Supervised study of new cases in the Outpatient Medical Clinic. Rotation through special clinics including cardiology, gastrointestinal diseases, chest diseases, diabetes, metabolism and endocrinology, hematology, allergy, rheumatoid disease, peripheral vascular disease, and gastroscopy. (6 cred.; 260 hrs.; prereq. clear record in all prior subjects.) Dr. Aagaard and staff.

#### *Elective Courses*

128su. Abnormal Physical Signs in the Chest. (Jr., sr.; 17 hrs. Not more than 4 students. Ancker Hospital.) Dr. Geer.

129su. Advanced Physical Diagnosis. (Prereq. Med. 101; jr.; not less than 3 or more than 6 students; Minneapolis General Hospital.) Dr. Peppard.

132su. Diagnosis and Treatment of Diseases of the Lungs. Three lectures and two clinics per week. (Hospital wards and dispensary.) Lectures with or without hospital work. (Cred. and hrs. ar.; soph., jr., sr.) Dr. Myers.

133su. Gastroenterology. Clinic demonstration and discussions of disorders of the gastrointestinal tract. (Jr., sr.; 4 to 8 students; University Hospital.) Dr. Carey.

136su. The Respiratory Organs in Health and Disease. (Jr., sr.; limited to 6 students.) Dr. Myers.

#### *Courses for Graduate Students*

201su. Clinical Medicine. Dr. Watson, Dr. Fahr, Dr. Spink, Dr. Ebert, Dr. Aagaard, Dr. Hoffbauer.

202su. Diseases of the Cardiovascular Apparatus. Dr. Fahr.

203su. Research in Medicine. Dr. Watson, Dr. Fahr, Dr. Spink, Dr. Ebert, Dr. Hoffbauer, Dr. Aagaard.

205su. Tuberculosis. Dr. Myers.

206su. Clinical Conference. Weekly meeting on Friday at 9 a.m. Presentation of problem cases. Discussion of diagnosis and treatment and consideration of pertinent literature. (1 cred.) Dr. Watson, Dr. Ebert, and staff.

207su. Clinical Pathological Conference. Weekly meeting on Wednesday at 11 a.m. Presentation of clinical features, necropsy findings, and discussion. Medical and surgical cases. (1 cred.) Dr. Bell, Dr. Watson, Dr. Wangenstein, and staff.

208su. Clinical Radiological Conference. Weekly meeting on Monday at 9 a.m. Presentation and discussion of X-ray films from the medical service, with clinical correlation. (1 cred.) Dr. Rigler, Dr. Watson, and staff.

209su. Psychosomatic Medicine. Weekly meeting on Thursday afternoon. (1 cred.) Dr. Hastings.

210su. Infectious Disease Seminar. Weekly meeting on Wednesday afternoon. (1 cred.) Dr. Spink.

211su. Electrocardiographic Conference. Weekly meeting on Tuesday afternoon. (1 cred.) Dr. Aagaard.

For other courses see Graduate Medical School Bulletin.

#### DIVISION OF DERMATOLOGY

##### *Required Courses*

124su. Senior Clerkship in Dermatology. Sections of the senior class in dermatology and syphilis. (4 cred.; 90 hrs.; University Hospitals.) Dr. Michelson and staff.



124xsu. Part of Course 124. (Minneapolis General Hospital.) Dr. Sweitzer and staff.

*Elective Courses*

- 159su. Assistantship, Dermatology, and Syphilis. (Prereq. jr. med. clerkship; limited to one student; Minneapolis General Hospital.) Dr. Sweitzer.  
 160su. Assistantship and Conference in Dermatology. (Prereq. jr. med. clerkship; limited to one student; University Hospitals.) Dr. Michelson and staff.  
 161su. Assistantship in Dermatology. (Prereq. Med. 124; limited to 2 students; Minneapolis General Hospital.) Dr. Sweitzer.  
 163su. Treatment of Syphilis. (Limited to 2 students; University Hospitals) Dr. Michelson and staff.  
 164su. Seminar in Pathology. Histopathology of the skin. Clinical and pathological phases will be exemplified. (Prereq. Path. 102.) Dr. Michelson.  
 165su. Seminar in Dermatology. (Hrs. ar.) Dr. Michelson and staff.  
 166su. Allergy and Dermatology. (Cred. and hrs. ar.; limited to one student.) Dr. Michelson.

*Courses for Graduate Students*

- 225su. Clinical Dermatology and Syphilology. Wards and Outpatient Departments of the University Hospitals, Veterans Hospital, Minneapolis General Hospital, and Ancker Hospital. Dr. Michelson and staff.  
 226su. Dermatology and Allergy. Conference twice weekly on diagnosis and treatment of skin conditions. Outpatient Department, University Hospitals. Dr. Michelson and staff.  
 227su. Histopathology of the Skin. Dr. Michelson and staff.  
 228su. Research in Dermatology and Syphilology. Dr. Michelson and staff.

DIVISION OF CLINICAL LABORATORY MEDICINE

*Required Courses*

- 102su. Clinical Laboratory Medicine. Methods of laboratory examination for diagnostic purposes. Sophomore year. (Prereq. Physiol.Chem. 100, students must have completed or be taking Path. 101; 5 cred.; 66 hrs.) Dr. Evans, Dr. Watson, and staff.

*Courses for Graduate Students*

- 235su. Advanced Clinical Laboratory Medicine. Dr. Evans and staff.  
 236su. Research on Clinical Laboratory Problems. Dr. Evans and staff.

OBSTETRICS AND GYNECOLOGY

FIRST AND SECOND TERMS

*Required Courses*

- 121su. Obstetrics. The physiology of pregnancy, labor, and puerperium. For senior medical students. (1 cred.; 11 hrs.) Dr. McKelvey, Dr. Lund, Dr. Rogers, and staff.  
 124, 125su. Introduction to Obstetrics and Gynecology. For medical students in the last half of the junior year. (2 cred.; 18 hrs.) Dr. McKelvey, Dr. Lund, Dr. Rogers, and staff.  
 135su. Clinical Clerkship in Obstetrics and Gynecology. Clinics in obstetrics and gynecology in the University Hospitals and Dispensary. (6 cred.; 260 hrs.) Dr. McKelvey, Dr. Lund, Dr. Rogers, and staff.  
 135xsu. Clinical Clerkship in Obstetrics and Gynecology. Part of 135su given at the Minneapolis General Hospital.

*Courses for Graduate Students*

- 201su. Advanced Obstetrics and Gynecology. Part I. required of first-year fellows. Dr. McKelvey, Dr. Lang, and staff.
- 205su. Advanced Obstetrics and Gynecology. Part II. Required of second-year fellows. Dr. McKelvey, Dr. Lang, and staff.
- 209su. Advanced Obstetrics and Gynecology. Part III. Required of third-year fellows. Dr. McKelvey, Dr. Lang, and staff.
- 216su. Research. Staff.

## OPHTHALMOLOGY AND OTOLARYNGOLOGY

## FIRST AND SECOND TERMS

*Required Courses*

- 100su. Lectures in Ophthalmology. (2 cred.; sr. med. stud.) Dr. Hansen, Dr. Hoffman, Dr. Stanford.
- 103su. Laryngology. Lectures and demonstrations. Senior medical students. (1 cred.) Dr. Boies and staff.
- 104su. Clinic in Diseases of the Ear. Diagnosis and treatment of cases. (2 cred.; sr. med. stud.; 45 hrs.; University Dispensary.) Dr. Boies, Dr. Connor, Dr. Hochfilzer, Dr. Tangen, Dr. Hilger, Dr. Priest.
- 105su. Clinic and Conferences in Diseases of the Nose and Throat. Diagnosis and treatment of cases. (2 cred.; sr. med. stud.; 45 hrs.; University Dispensary.) Dr. Boies and staff.
- 106su. Clinic in Diseases of the Eye. Diagnosis and treatment of cases. All sr. med. stud. are required to have an ophthalmoscope on an individual basis. Dr. Hansen and staff.

*Elective Courses*

- 121su. Operative Clinic in Eye. Limited to 6 stud. (1 cred.; T or Th 3:00 to 4:30.) Dr. Hansen and staff.
- 122su. Ophthalmoscopy. Limited to 8 stud. (2 cred.; 2 sec.; 22 hrs.; days and hrs. ar. with departmental office.) Dr. Schwartz, Dr. Lindberg.

## PATHOLOGY

## FIRST AND SECOND TERMS

*Required Courses*

- 102su. General Pathology. (9 cred.; soph. med. stud.; prereq. histology, embryology, and special bacteriology; lect. MTWThF 8:00 to 8:50; 102 IA, lab. sec. AB, MTF 9:00 to 11:20, W 1:30 to 4:00; lab. sec. CD, WThS 9:00 to 11:20, M 1:30 to 4:00.) Dr. McCartney and assistants.
- 109su. Clinical-Pathological Conference. Presentation of clinical data on selected cases with discussion of etiology and diagnosis. Required in clerkship period. Elective for others. (1 cred.; prereq. Path. 102; F 4:00-5:00; 102 IA.) Dr. Bell and staff.

*Elective Courses*

- 104su. Autopsies. Postmortem technique; examination of fresh organs, etc. (Cred. and hrs. ar.; prereq. Path. 102.) Dr. Bell and staff.
- 111su. Conference on Autopsies. (1 cred.; prereq. Path. 102; T 12:30-2:00; 104 IA.) Dr. Bell and staff.
- 201su. Research. Students with the necessary preliminary training may elect research either as a major or minor in pathology. Permission required. (Cred. and hrs. ar.) Dr. Bell, Dr. Clawson, Dr. McCartney, Dr. Hebbel, Dr. Noble.

## PEDIATRICS

## FIRST AND SECOND TERMS

*Required Junior Courses*

- 120su. The Normal Child. (a) Physical growth and development. Dr. Bosma, Dr. Beach. (b) Psychological development. Dr. Jensen, Miss Arcola. (c) Physiology and metabolism of infancy and childhood. Dr. McQuarrie, Dr. Ziegler. (W 8:00 to 8:50 a.m.; Eustis Amphitheater.)
- 121su. Clinical Diagnosis in Infancy and Childhood. The pathogenesis of all diseases and disorders of childhood, their recognition and classification, including the disturbances of speech, psychiatric and dental disorders, and diagnosis. Follows Course 120. (W 8:00 to 8:50 a.m.; Eustis Amphitheater.) Dr. McQuarrie, Dr. Adams, Dr. Jensen, Dr. Stoesser, Dr. Cohen, and staff.
- 122su. Diseases of Infancy and Childhood and Their Treatment. Emphasis is placed on the diseases which are more or less peculiar to the age periods before the sixteenth year. Follows Course 121. (Total 1 cred. for 120, 121, and 122; 11 hrs.; W 8:00 to 8:50 a.m.; Eustis Amphitheater.) Dr. McQuarrie, Dr. Adams, Dr. Jensen, Dr. Stoesser, and senior staff.
- 123su. Divisional Demonstration Clinic on Noncontagious Diseases. One quarter for each student. (1½ cred.; 17 hrs.; W 9:00 to 10:30 a.m.; Minneapolis General Hospital.) Dr. Huenekens and Dr. Seham.
- 124su. Junior Clinical Clerkship in Pediatrics. Patients in the wards are assigned to individual students for examination, treatment, and "follow-up" observation under supervision. Each student has five weeks at Minneapolis General Hospital. (6 cred.; 260 hrs.) Dr. McQuarrie, Dr. Adams, Dr. Jensen, Dr. Stoesser, Dr. Bosma, and junior staff.
- 130su. Divisional Demonstration Clinic on Contagious Diseases. One quarter for each student. (1 cred.; 11 hrs.; Minneapolis General Hospital and Ancker Hospital.) Dr. Stoesser, Dr. Platou, and clinical staff.

*Required Senior Courses*

- 135su. Senior Clinical Clerkship in Pediatrics. Patients in dispensaries are assigned to individual students for examination, treatment, and "follow-up" observation under supervision. Special clinics in well-baby care, allergy, heart, metabolism, and child psychiatry are attended each week. One sixth of class on pediatric clerkship at one time—one half assigned to the University Hospital, the other half to the Minneapolis General Hospital. (4 cred.; 6 weeks; 160 hrs.; 9:00 to 12:00 noon daily.) Dr. McQuarrie, Dr. Adams, Dr. Jensen, Dr. Grulee, Dr. Stoesser, Dr. Bosma, and staff.

*Elective Courses*

- 150su.† Physiology and Diseases of the Newborn. Dr. Adams, Dr. Stoesser.
- 152su.† Fundamental Principles of Nutrition and Metabolism as Applied to Children. Seminar course. Dr. McQuarrie, Dr. Ziegler.
- 154su.† Endocrinology. As Applied to Pediatrics. Seminar course. Dr. McQuarrie.
- 156su.† Advanced Study of Noncontagious Diseases. Both clinical and experimental subject matter included. Dr. McQuarrie, Dr. Adams.
- 158su.† Advanced Study of Contagious Diseases. Dr. Platou, Dr. Stoesser.
- 160su. Allergic Disorders in Childhood. Dr. Stoesser.
- 162su. Common Behavior Disturbances in Childhood. Their recognition and management. Dr. Jensen, Dr. Lippman, and Dr. Comly.

† Not offered to fewer than 10 students.

- 166su. Weekly Seminar for Detailed Discussion of Fundamental Subjects Related to Pediatrics. Dr. McQuarrie, Dr. Ziegler.
- 168su. Speech Disturbances in Childhood. Clinic course. Dr. Jensen and Mr. Stanswick.
- 170su. Rheumatic Infection and Heart Diseases in Childhood. Dr. Adams, Dr. Shapiro, Dr. Dwan.

## PHARMACOLOGY

## FIRST AND SECOND TERMS

- 8su. Elementary Pharmacology. For student nurses. (3 cred.; 44 hrs.; lect. TTh VII, 113MeS; lab. TTh VIII-IX, 101MH.) Dr. Bieter, Dr. Wright, Dr. McManus.
- 102su. General and Experimental Pharmacology. A detailed study of drugs important in medical practice. For sophomore medical students and others. Prereq. Course 101. (6 cred.; lect. 44 hrs.; lab. 66 hrs.) Dr. Bieter, Dr. Wright, Dr. Cranston, Dr. McManus, and assistants.
- 109su.† Pharmacological Problems. Experimental study of special topics in pharmacology, with a review of the literature. (Cred. and hrs. ar.) Dr. Bieter, Dr. Wright.
- 110, 110xsu. Toxicology. A study of systematic qualitative toxicological analysis. Lectures only may be taken if desired. (Cred. and hrs. ar.) Dr. Bieter, Dr. Wright.
- 111su. Advanced Toxicology. A laboratory study of quantitative toxicological analysis. (Cred. and hrs. ar.; prereq. Pharm. 110, or may be taken simultaneously.) Dr. Bieter, Dr. Wright.
- 123su. Special Topics in Pharmacology. (2 cred. or ar.; lect. 22 hrs.) Dr. Bieter, Dr. Wright, Dr. Cranston.
- 203su. Research in Pharmacology. For grad. and advanced students. (Cred. and hrs. ar.) Dr. Bieter, Dr. Wright.
- 204su. Advanced Pharmacology. (Cred. and hrs. ar.) Dr. Bieter and Dr. Wright.

## PHYSIOLOGY

## FIRST TERM

- 4su.‡‡ Human Physiology. An elementary course consisting of lectures and demonstrations for students desiring an introduction to the subject. (4 cred.; prereq. high school or college biology and chemistry; lect. and dem. MTWThF I-II; 166Ph.) Dr. King.
- 113su. Problems in Physiology. Arranged with qualified students. Each student will be assigned topics for special laboratory study or arrangements may be made for a survey of research techniques, including literature assignments. (Cred. and hrs. ar.; students must obtain permission of instructor; prereq. 103, 104 or equiv.) Graduate staff.
- 135asu. Conference on Physiology. Arranged with qualified students. Various topics in the field of physiology will be considered by several instructors. Consult department office for schedule. (Cred. and hrs. ar.) Graduate staff.
- 203su. Research in Physiology. (Cred. and hrs. ar.) Dr. Visscher.

## SECOND TERM

- 113su. Problems in Physiology. Same as First Term.
- 135asu. Conference on Physiology. Same as First Term.
- 203su. Research in Physiology. Same as first term.

† A fee of \$1 per credit is charged for this course.

‡‡ A fee of \$2 is charged for this course.

## PHYSIOLOGICAL CHEMISTRY

## FIRST TERM

- 153su. Problems in Physiological Chemistry. Special work arranged with qualified students. May be taken one or more quarters. (Cred. and hrs. ar.; prereq. 100, 101.) Dr. Armstrong, Dr. Barnum, Dr. Glick, Dr. Frame, Dr. Carr.
- 205su. Research in Physiological Chemistry. (Cred. and hrs. ar.) Dr. Armstrong, Dr. Barnum, Dr. Glick.

## SECOND TERM

- 153su. Problems in Physiological Chemistry. Special work arranged with qualified students. May be taken one or more quarters. (Cred. and hrs. ar.; prereq. 100, 101.) Dr. Armstrong, Dr. Glick, Dr. Cohen, Dr. Carr.
- 205su. Research in Physiological Chemistry. (Cred. and hrs. ar.) Dr. Armstrong, Dr. Cohen, Dr. Glick.

## FIRST AND SECOND TERMS

- 101su. Physiological Chemistry. (6 cred.; jr., sr.; prereq. 100; lect. MTWF IV; ar.; lab. Div. A, MW I-II-III, lab. Div. B, Th II-III-IV, F VII-IX; 310MH.) Dr. Armstrong, Dr. Barnum, Dr. Cohen, Dr. Carr.

## PSYCHIATRY AND NEUROLOGY

*Required Courses*

## FIRST AND SECOND TERMS

- 101su. Clinical Neuropsychiatry. Systematic clinics, demonstrations, and lectures. (4 cred.; 44 hrs.; jr. yr.; prereq. Med. 101, 102; Th 4-5; Todd Amphitheater.) Dr. Hastings and staff.
- 103su. Junior Clinical Clerkship in Neuropsychiatry. Sections of the class for nine-week periods in the University Hospitals. (6 cred.; 260 hrs.) Dr. Hastings and staff.
- 105su. Neuropsychiatry Clinic. Seniors only. Dr. Hastings and staff.

*Elective Courses for Nonmedical Students*

## FIRST TERM

- 171su. Descriptive Neuropsychiatry. (Social Work 171.) (2 cred.; 22 hrs.; prereq. Neuropsy. 70 or Psy. 144-145.) Dr. Cottrell.
- 173su. Mental Hygiene Aspects of Public Health Nursing. For graduate nurses only. (3 cred.; 33 hrs.) Miss Shalit.

## SECOND TERM

- 70su. Introductory Psychiatry (Social Work 170). For upper group only. (3 cred.; 33 hrs.; prereq. elem. psy. and soc.) Dr. Hinckley.

*Courses for Graduate Students*

## FIRST AND SECOND TERMS

- 208su. Clinical Neurology. Supervised practice, inpatient and outpatient services. (Cred. and hrs. ar.) Dr. Baker and staff.
- 208xsu. Clinical Psychiatry. Supervised practice, inpatient and outpatient services. (Cred. and hrs. ar.) Dr. Hastings and staff.
- 209su. Research in Neurology. (Cred. and hrs. ar.) Dr. Baker.
- 212su. Survey of Neuropathology. (2 cred.; prereq. Neuropsy. 210; 19MH.) Dr. Baker.
- 216su. Neuropsychiatric Case Conference. (Cred. and hrs. ar.) Dr. Hastings and staff.

- 226su. Neurological-Neurosurgical Conference. (Same as Surgery 318.) Review of X rays, case histories and neuropathological material on neurological and neurosurgical cases. (1 cred.; hrs. ar.) Dr. Baker.
- 228su. Research in Neuropathology. (Cred. and hrs. ar.) Dr. Baker.

## SCHOOL OF PUBLIC HEALTH

## FIRST TERM

- 50su.¶ Public and Personal 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.; open to jrs. and srs. who have not taken 3, 4, 52, 53, or G.C. 10C Human Biology in the General College; no prereq.; MTWThF I; †.) Dr. Todd.
- 58su. Maternal and Child Hygiene. The maternal welfare program; importance of breast feeding; conduct of infant welfare clinics in cities and rural communities; consideration of child of preschool and school age as to malnutrition, physical defects, cardiac and nervous disorders. (3 cred.; nurses; prereq. 53 and 62; MTWTh I, M VI; †.) Ar.
- 59su. Health of the School Child. Mental and physical growth; discovery of physical defects; exercise, fatigue, emotional problems; health habits; diseases of school children; practical problems of health supervision and health instruction. (3 cred.; prereq. 3 and 4, or 3 and 51, or G.C. 10C and 4, or G.C. 10C and 51, or 50, or 53 will be waived for teachers and school nurses, but cred. granted only after completion of prereq.; MTWTh II, W VI; †.) Ar.
- 60su. Tuberculosis and Its Control. History of tuberculosis movement and campaign in the United States. Early diagnosis and sanatorium treatment; tuberculosis in children; the psychology of tuberculosis; supervision of returned sanatoria patients; state program for the eradication of tuberculosis; legislation. (2 cred.; jr., sr.; prereq. 4 or 50 or 51 or 52 or 53, and 62; MTWF IV; †.) Dr. Myers.
- 62-63su. Principles of Public Health Nursing. Trends, principles, and techniques in public health nursing service including family health guidance. Organization of public health nursing services; program planning; evaluation; professional problems in public health nursing. (3 cred.; public health nurses; prereq. 53 or 100 or equiv. but may be taken with 100; MTWThF II-III; †.) Miss Mickey.
- 66su.††§ Field Practice in Rural Nursing. Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62, and 67.) Miss Mickey.
- 67su.††§ Field Practice with Family Health Agency. Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics, and in home visiting. This includes bedside care of all types of cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62.) Miss Mickey.

† Room schedule posted on bulletin board outside of 121 Millard Hall.

§ Students must maintain a C average in theory completed before they are admitted to any field work.

¶ No credit is granted for this course in the major sequence in public health nursing.

†† A fee of \$1 per credit is charged for this course.

- 101su. Public Health Administration and Field Work. A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; sr. med. stud. only.) Dr. Anderson and associates.
- 102su. Environmental Sanitation I. Methods for promoting man's health and comfort by controlling his environment: water supply sanitation, food sanitation, pollution abatement; sewage, excreta, and waste disposal; bathing place sanitation, air hygiene, illumination, housing, control of insect and animal vectors of disease, industrial hygiene and sanitation. (3 cred.; sr., grad.; prereq. 50 or 51 or 53 or 100 or permission, or may be taken concurrently with any of these; MTWThF III; †.) Mr. Whittaker.
- 119su.‡‡ Field Practice in Environmental Sanitation. Credits allowed according to experience in this field. (Cred. ar.; by permission.) Mr. Whittaker, Mr. Pierce, Mr. Kingston, Mr. Handy.
- 126su. Industrial Health Problems. Organization of industrial health services, state programs in industrial hygiene. Industrial hazards and their control. Procedures in industrial health services. (3 cred.; prereq. 53 or 100, Chem. 1-2 or equivalent, or permission of department; MTWThF X; †.) Dr. Foker.
- 129su.‡‡ Field Work in Industrial Nursing. Planned observation visits to selected industrial health services to demonstrate range of industrial health problems. Supervised experience in industrial medical unit. Weekly conferences. Emphasis on practical functioning of the nurse in industrial and commercial organizations. (Cred. ar.; prereq. 67.) Miss Mickey.
- 171su. Problems in Public Health Nursing. For advanced students who wish to work on special problems in public health nursing. (Cred. ar.; prereq. 170 or permission of instructor.) Miss Mickey and associates.
- 183su. Workshop for Public Health Nursing Field Teachers. (Two weeks, June 23-July 5.) Methods and techniques needed to develop, plan and evaluate field program for students and new staff. (3 cred.; prereq. 62-63 and experience in public health nursing or special permission of instructor; hrs. ar.) Miss Mouw, Miss Neuschaefer, Miss Taylor and associates.

## SECOND TERM

- 65su.‡‡§ Field Practice in School Nursing. Credits allowed according to experience in this field. Working with the school nurse, the student observes and participates in the activities included in the school nursing program; special attention to organization, relationships, techniques, methods of informal health teaching, provision for handicapped children, and home visiting. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62, and 67.) Miss Taylor.
- 66su.‡‡§ Field Practice in Rural Nursing. Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62, and 67.) Miss Taylor.
- 67su.‡‡§ Field Practice with Family Health Agency. Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics and in home visiting. This includes bedside care of all types of

† Room schedule posted on bulletin board outside of 121 Millard Hall.

‡‡ A fee of \$1 per credit is charged for this course.

§ Students must maintain a C average in theory completed before they are admitted to any field work.

- cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62.) Miss Taylor.
- 70su.‡‡ Practice Teaching in Home Nursing for Public Health Nurses. (Same as Ed.T. 50.) Includes practice in planning instruction and in teaching adults. (Cred. ar.; jr., sr.; prereq. P.H. 67, Ed. 81, or permission of instructor.) (Enrolment limited.) Miss Taylor.
- 100su. Elements of Preventive Medicine and Public Health. Susceptibility and resistance to disease; occurrence and prevention of communicable, degenerative, and industrial diseases; protection of food, water, and milk; school health work; vital statistics. (5 cred.; prereq. 3 or 50 or equiv. and a course in bacteriology; public health nurses and students in presocial work. This course was formerly P.H. 53. (Lect. MTWThF III, rec. MTWF IV; †.) Dr. Thomson.
- 101su. Public Health Administration and Field Work. A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; sr. med. stud. only.) Dr. Anderson and associates.
- 104su. Epidemiology I. Factors underlying the spread of infectious diseases, with detailed discussion of selected diseases; simple statistical and epidemiologic methods in the study of diseases. Lectures and laboratory. (3 cred.; jr., sr., grad.; prereq. 53 or 100 and consent of instructor; 140 must be taken in conjunction with this course unless student has already had 110, 140 or equiv.; MTWThF I; †.) Dr. Anderson.
- 119su.‡‡ Field Practice in Environmental Sanitation. Credits allowed according to experience in this field. (Cred. ar.; by permission.) Mr. Whittaker, Mr. Pierce, Mr. Kingston, Mr. Handy.
- 125su. The Community Health Education Program. A course intended primarily for those preparing for leadership in community health education to include organization, administration, and evaluation of community health education programs and the selection, preparation, and use of media commonly employed in health education. (3 cred.; prereq. 53 or 100 or 104 and 106, or to be taken concurrently with 106; MTWThF VIII; †.) Miss Grout.
- 133su. Mental Hygiene Aspects of Public Health Nursing. Discussion of emotional factors underlying wholesome family relations and of problems which interfere with successful adjustment in family and community life. Illustrative case material related to problems met by the public health nurse will be used. (3 cred.; prereq. 62 or experience in public health nursing; MTWThF I; †.) Ar.
- 170su. Supervision in Public Health Nursing. Nature of supervision, classification of activities; methods of supervision, including field visitation, individual counseling, group conferences, staff education programs, administrative functions of supervisors, preparation and selection of supervisors. (3 cred.; prereq. 53, 61, 63, and experience in public health nursing, or by permission; MTWThF III; †.) Miss Taylor.
- 171su. Problems in Public Health Nursing. For advanced students who wish to work on special problems in public health nursing. (Cred. ar.; prereq. 170 or permission of instructor.) Miss Taylor.
- 184su. Workshop in Mental Hygiene. (Two weeks, July 28-August 9.) A workshop for public health nurses functioning as senior staff supervisors or consultants. Application of principles and techniques of mental hygiene to the development of emotional and professional maturity and ability to work with and guide others. (3 cred.; prereq. 61 or 133 or equivalent; hrs. ar.) Guest lecturer.

† Room schedule posted on bulletin board outside of 121 Millard Hall.

‡‡ A fee of \$1 per credit is charged for this course.



BIOSTATISTICS

FIRST TERM

- 110su. Biometric Principles. An introduction to statistical analysis with emphasis on the basic principles of statistical reasoning. The description of univariate distributions, normal correlations, simple tests of significance, and goodness of fit. Course 111 will be taken concurrently. (3 cred.; prereq. 18 cred. in biol. sci. or math. through anal. geom.; MWF I, IV; 118MH.) Mrs. Wilder.
- 111su.‡ Biometry Laboratory. Practical training in machine calculation and statistical techniques. To be taken concurrently with Course 110. (2 cred.; lab. 12 hrs. ar.; 118MH.) Mrs. Wilder.

SECOND TERM

- 140su.‡ Vital Statistics. Study of official sources of vital statistics, including population changes, calculation of rates, and graphical exposition of trends. (3 cred.; to be taken in conjunction with 104, permission of instructor; MTWThF II; 118MH.) Dr. Anderson.

RADIOLOGY

FIRST AND SECOND TERMS

- 103asu. Neuroradiology for Neuropsychiatric Clerks. Part of Neuropsychiatry 103. Dr. Peterson.
- 104su. Roentgen and Radium Therapy. Jr., sr., and grad. students. 11 hrs. Dr. Stenstrom.
- 111su. Medical Roentgenologic Conference for Medical Clerks. Part of Medicine 111. Dr. Rigler and staff.
- 112su. Roentgen Diagnostic Clinic for Medical Clerks. Part of Medicine 112. Dr. Rigler and staff.
- 121su. Roentgenology and Radiation Therapy and Biophysics. Dr. Rigler and Dr. Stenstrom.
- 124su. Pediatric-Roentgenologic Conference for Pediatric Clerks. Part of Pediatrics 124. Dr. Rigler and staff.
- 135asu. Radiation Therapy for Surgical Clerks. Part of Surgery 135. Dr. Stenstrom and staff.
- 135bsu. Roentgen Diagnostic Clinic for Surgical Clerks. Part of Surgery 135. Dr. Rigler and staff.
- 135csu. Surgical Roentgenologic Conference for Surgical Clerks. Part of Surgery 135. Dr. Rigler and staff.
- 163asu. Neurosurgical-Roentgenologic Conference for Neurosurgical Clerks. Part of Surgery 163. Dr. Peterson, Dr. Peyton.

X-RAY TECHNOLOGY AND MEDICAL TECHNOLOGY

Before registering, students should consult special advisers in the Medical Technology Office, M-410, University Hospitals.

OCCUPATIONAL THERAPY

Consult Occupational Therapy Office, 3302 Powell Hall, University of Minnesota, Minneapolis 14.

PHYSICAL THERAPY

Consult Physical Therapy Office, W-300, University Hospitals.

‡ A fee of \$1 is charged for this course.

## SURGERY

## FIRST AND SECOND TERMS

*Required Courses*

- 129su. Surgical Clinics for Juniors. Amphitheater clinic demonstrating surgical conditions in hospital patients. (3 cred.; 33 hrs.) Surgery staff.
- 135su. Clinical Clerkship. The individual study of assigned patients; case histories, laboratory examinations, provisional diagnoses with suggestions as to therapy; attendance at operation and observation of postoperative management. (6 cred.; 260 hrs.; jr.) Staff.
- 135asu. Clinical Pathology of Tumors. A combined clinical and pathological consideration of tumors. Insofar as available material permits, a systematic presentation of the manifestations and effects of malignant tumors which come in the province of general surgery and its divisions. Part of Course 135. (University Hospital.) Staff.
- 135bsu. Reading Course. A weekly recitation during the clerkship on assigned reading in a standard textbook of surgery. Quiz and lecture. Part of Course 135. Surgery staff.
- 135csu. Surgical-Pathological Conference. A review of the gross and microscopic findings of surgical specimens removed during the preceding week; also an attempt will be made to review systematically some of the aspects of surgical pathology which are of especial importance to surgeons. Part of Course 135. Surgery staff.
- 135casu. Medico-Surgical-Pathological Conference. Weekly combined meetings of medical and surgical staffs in which the postmortem findings of particularly interesting and instructive cases are discussed.
- 135dsu. Roentgenological-Surgical Conference. The films of all surgical patients presenting interesting roentgen findings are reviewed. Part of Course 135 (see also Radiology program.) Radiology and Surgery staffs.
- 135esu. Surgical Conference. Cases presenting interesting problems are presented and discussed. Part of Course 135. Surgery staff.
- 135gsu. Outpatient Surgical Clinic, General Surgery, and Proctology. Sections daily in the Outpatient Department. Part of Course 135. Dr. Wangenstein, Dr. Paine, Dr. Dennis, Dr. Varco, Dr. Merendino, Dr. State, Dr. Kolouch.
- 135gasu. Applied Surgical Anatomy. Weekly demonstrations in which by the use of dissections prepared by surgical fellows a systematic review of the regional anatomy of the major conditions coming with the purview of surgery and its specialties is presented. Part of Course 135. Surgery staff.
- 135hsu. Fractures and Traumatic Surgery. Under the supervision of the hospital staff the student participates in the care of fractures. Part of Course 135. (Minneapolis General Hospital.) Surgery staff.
- 138su. Clerkship in Fractures and Dislocations. Seniors. Students are instructed and supervised in care of fracture cases and dislocations. Part of Course 136. (2 cred.; 90 hrs.) Minneapolis General Hospital. Surgery staff.
- 163su. Neurosurgery Clerkship. For seniors. The individual study of assigned patients on the neurosurgical service. History taking, examination, special studies, diagnosis and therapy are considered, with attendance at operations. Dr. Peyton and staff.
- 163asu. Neurosurgical-Neurological-Roentgenologic Conference. A weekly review of X rays and case histories on neurosurgical and neurological services. (Part of Course 163.) Dr. Peyton, Dr. Baker, Dr. Peterson, and staffs.

- 170su. Urology Clerkship. For seniors. The individual study of assigned patients on the urological service. History taking, examinations, special studies, diagnosis and therapy are considered, with attendance at operations. Dr. Creevy and staff.
- 190su. Orthopedic Clerkship. For seniors. The individual study of assigned patients on the orthopedic service. History taking, examination, special studies, diagnosis and therapy are considered, with attendance at operations. Dr. Creevy and staff.

#### *Elective Courses*

- 139su. Operative Surgery. The student is permitted to participate in surgical procedures on hospital patients in the operating room. (Cred. and hrs. ar.) Staff.
- 152su. Problems in Clinical Investigations. A study of special case records correlated with literature study. (Cred. and hrs. ar.) Dr. Wangenstein, Dr. Paine, Dr. Peyton, Dr. Dennis, Dr. Varco, Dr. State, Dr. Kolouch.
- 159su. Clinic in Traumatic Surgery. Juniors and seniors. (11 hrs.; Minneapolis General Hospital.) Dr. Zierold.
- 167su. Problems in Experimental Surgery. Students under supervision will investigate problems assigned to them. As their experience increases, they are permitted to do the operations incident to their problems. (Cred. and hrs. ar.) Dr. Wangenstein, Dr. Paine, Dr. Peyton, Dr. Dennis, Dr. State, Dr. Kolouch, Dr. Varco.
- 169su. Diagnostic Bedside Surgical Clinic. At least four students must register if course is to be given. (Cred. and hrs. ar.; Minneapolis General Hospital.)

#### DIVISION OF ANESTHESIA

##### *Required Courses*

- 121bsu. Principles of Anesthesia. Part of Course 121. Five lectures. Dr. Knight.
- 136esu. Individual Instruction in Anesthesia. Part of Surgical Specialties, Surgery 136.
- 136gsu. Clinical Conferences in Anesthesia. Part of Surgical Specialties, Surgery 136.

##### *Elective Course*

- 165su. Clinical Anesthesia. Selected students may spend additional time in the clinical administration of anesthetics. Dr. Knight.

##### *Course for Undergraduate and Graduate Students*

- 104su. Principles of Anesthesia. Lectures and conferences. (1 cred.; 11 hrs.) Dr. Knight.

#### SCHOOL OF NURSING†

##### COURSES AND FEES

##### *Graduate Nurses*

The program of courses in the 1947 Summer Session has been especially planned to meet the needs of graduate nurses who are preparing for head nurse and supervisory positions, for returning veterans and for nursing school administrators. The student may complete courses totaling approximately eight or nine credits in the six-week period from June 18 through July 25. She may also carry approximately eight credits (chiefly non-professional) in the second term, July 29 through August 29. Students register in College of Education and pay Summer Session fees. See page 11.

##### *Nursing Education Majors*

Nursing education majors may register for courses in their major during the Summer Session.

† For courses in Public Health Nursing see page 92.

College graduates who have completed a basic professional program in nursing may begin specialization in the nursing education major in the Summer Session.

Students register in College of Education and pay Summer Session fees. See page 11.

Students interested in other programs offered by the School of Nursing should see the School of Nursing Bulletin.

*Fees—School of Nursing*

The School of Nursing offers work on the quarterly (not term) basis. Fees charged for summer quarter 1947:

2nd through 10th quarters:		Postgraduates, tuition .....	none
Tuition, resident and nonresident .....	\$20.00	Psychiatric nursing .....	
11th and 12th quarters:		Tuition per quarter .....	\$100.00
Tuition (Senior Cadets) .....	none	Incidental fee (1st quarter only) .....	10.65

FIRST TERM

- Nurs.Ed.60su. Ward Administration. The organization of the hospital; principles of administration and their application to ward management; analysis and maintenance of nursing service; selection, orientation, assignments and motivation of personnel; planning and conducting clinical teaching programs. (4 cred.; graduate nurses§; no prereq.; MTWF III, IV; ar.§) Mrs. Randall.
- Nurs.Ed.62su. Personnel Program in Schools of Nursing. Survey of principles and techniques of personnel work applied to problems in schools of nursing. The relationship of such topics as individual differences, human behavior, personality, emotions, and intelligence to the problems of personnel guidance. Study of such techniques as psychological tests, personnel records, orientation periods, remedial programs, and counseling interviews in schools of nursing. (3 cred.; grad. nurses§; no prereq.; MTWThF I; ar.§) Miss Gordon.
- Nurs.Ed.63su. Motion Study. A course designed to apply the science of motion study to the technique of nursing, and to devise better ways of doing the job. Motion picture method of analysis; lectures, and laboratory work. (2 cred.; grad. nurses; MW VII, VIII; ar.) Mr. Laitala.
- Nurs.Ed.68su. Construction and Use of Examinations and Other Measurements in Basic Nursing Courses. (3 cred.; grad. nurse§; MTWThF V; ar.§) Miss Gordon.
- Nurs.Ed.72su. Principles of Learning and Methods of Teaching. Study of learning situations in the basic professional program in nursing. Sources, selection, and organization of instructional materials; evaluation of nursing care; content and methods of clinical teaching; measurement of outcomes. (3 cred.; grad. nurses; no prereq.; MTWThF VI; ar.§) Miss Boyle.
- Nurs.Ed.73su. Principles of Economics in Nursing Service Administration. A study of the principles of business administration in their application to hospital organization and management. (1 cred.; grad. nurses§; no prereq.; TTh VII; ar.§) Miss Gorgas.
- Nurs.Ed.85su. Fundamentals of Nursing Service Administration. (Ar.) Ar.

FIRST AND SECOND TERMS

Ed.T.51Asu.††† Special Methods of Teaching in Schools of Nursing. (3 cred.; sr.; prereq. Ed.51A-B or parallel; MWF II; ar.§) Miss Harrington.

† College of Education Bulletin, 1944-46.

§ This includes students in Part III of the degree curriculum.

¶ Classroom schedule will be posted on the bulletin board outside Room 125, Medical Sciences, at the beginning of the Summer Session.

‡ A fee of \$1 per credit is charged for this course.

\*\* Requirements for registration in Ed.T. 51A-B are as follows:

1. A passing grade in Ed. 51A and B.
2. Taking the psychological examinations.
3. Attainment of a scholastic average of 1.5 in the field in which the practice teaching is to be done. A major portion of the work in the teaching field should be completed.
4. The recommendation for the subject matter department in the major field.
5. Passing of the required speech test.

## SCHOOL OF DENTISTRY

The School of Dentistry will not offer courses regularly scheduled in the dental curriculum unless the necessity arises to offer instruction for students who may fail and will need to remove such failures before being promoted to the next succeeding class. The clinic will remain open, however, for those who wish to receive instruction in clinical work or for those who may not have completed specified clinical or laboratory requirements for promotion. The following instructors will be available:

1st Term: Dr. Joseph F. Shellman, Dr. Daniel A. Listiak, Dr. Lyle A. Brecht, and Dr. Douglas H. Yock.

2nd Term: Dr. Joseph F. Shellman, Dr. Lyle A. Brecht, and Dr. Douglas H. Yock.

Tuition fees for the quarter are: resident, \$65; nonresident, \$108. Credit hour fee: resident, \$5.50; nonresident, \$9. There will be the usual incidental fee of \$10.65 for the Coffman Memorial Union, the Health Service, the *Minnesota Daily*, etc. Deposit fee for the summer quarter only, \$2.

## COLLEGE OF EDUCATION

Courses in elementary and secondary education listed in the following pages may be used for *renewal of teaching certificates*. Former teachers re-entering the profession should consult with elementary and secondary education advisers or with the dean's office, College of Education, concerning a program for renewal of certificates.

Students reading this section of the bulletin should note that under Curriculum and Instruction, Educational Administration, Educational Psychology, and Methods and Directed Teaching, the courses are grouped for those interested in elementary, secondary, and higher education fields. Under each division courses of general interest are listed *General Courses* and these are followed by the offerings in *Elementary Education*, *Secondary Education*, and *Higher Education*.

Professional courses in education presuppose completion of Junior College requirements in the University of Minnesota or the equivalent in colleges of similar grade elsewhere. Graduation from the advanced course of Minnesota state teachers colleges is accepted as equivalent. Students with this training may be admitted to any course for which they have satisfied the prerequisite.

For all general matters relating to admission, advanced standing, credits, honor points, curricula, and requirements for graduation, students should consult the College of Education Bulletin.

Students expecting to become candidates for a degree should seek as early as possible the advice of the major adviser in the department concerned in order to learn the requirements of the special curriculum they will need to complete.

### STUDENTS' WORK COMMITTEE

Undergraduate students with questions concerning program adjustments and substitutions for required work should consult their advisers or the chairman of the Students' Work Committee. The office of the chairman in the first term will be 206 Burton Hall (Miss Alexander), and in the second term, 202 Burton Hall (Miss Edwards).

### WORKSHOPS

**Graduate Credit for Workshops**—The amount of graduate credit in workshops which may be used on a master's degree program is limited. Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate programs.

**Curriculum Workshop, Minneapolis Group**—In the first term Minneapolis teachers and other selected applicants will be accepted for a Workshop on Curriculum Problems planned jointly by the College of Education and the Minneapolis Public Schools. Interested students should write to the director, Dr. Walter Anderson, General Assistant Superintendent of Schools, Minneapolis, or to the Dean's Office, College of Education, University of Minnesota. (See Ed.C.I. 172su, Minneapolis Group.)

**Curriculum Workshop, Experimental Schools**—A second curriculum workshop for the first term has been planned for staff members from the Minnesota schools cooperating in the experimental curriculum study under the College of Education. Applicants for this workshop should apply to the director, Mr. Nelson L. Bossing, 222 Burton Hall, University of Minnesota. (See Ed.C.I. 172su, Experimental Schools.)

**Workshops in Childhood Education and Child Development**—See Institute of Child Welfare, page 133.

**Music Education Workshop**—In the first summer term a Workshop in Music Education will emphasize problems in elementary school music. Experienced teachers, graduate students, and selected seniors will work together on group and individual problems in this area. (See Mu.Ed. 150Esu.)

**Workshop in Higher Education**—The workshop for the study of problems of teacher education in the liberal arts colleges and teacher training institutions will be scheduled from June 9 to July 4, jointly sponsored by the College of Education and the North Central Association of Colleges and Secondary Schools. Applicants should write to the Dean's Office, College of Education, University of Minnesota, Minneapolis 14, for permission to register. (See Ed.C.I. 228su.)

**Workshop in Home Economics Education**—A four-week workshop has been scheduled for July 29 to August 23 in the second term for the discussion of problems of home economics education in colleges, universities and teacher training institutions. Registration is limited, and applicants should write to the director, Mrs. Clara Brown Army, Home Economics Department, University Farm, St. Paul 1. (See H.E.Ed. 295su.)

**Workshop in Rural Education**—A workshop for rural teachers and administrators has been planned for the second summer term as a full day's program for nine credits. Students will register for Ed.C.I. 117, Rural Education for Administrators and Teachers, 3 credits, and for 6 credits in Ed.C.I. 187, Workshop in Rural Education. The core course will be scheduled for nine o'clock daily, and will be followed by group and individual projects emphasizing special needs of rural teachers. Application forms for admission to the Workshop will be sent on request. Interested students should write to the Dean's Office, College of Education, 202 Burton Hall, University of Minnesota, Minneapolis 14.

### SUMMER DEMONSTRATION HIGH SCHOOL

The University High School will be in session during the first term of the Summer Session. Instruction will be offered in English, mathematics, general science, chemistry, physics, biology, history, social studies, typing, art, speech, home economics, Latin, and Spanish. The school is a six-year high school comprising grades seven to twelve, with courses organized to provide individual attention to the needs and capacities of the pupils.

Admission to the Summer Session is open to any pupil of normal high school age. Children of teachers or other professional workers who are attending the Summer Session of the University are especially welcomed in the summer term of the University High School. For information regarding fees and registration procedure, address the Principal's Office, University High School, Minneapolis 14, Minnesota.

Students registered in Ed.T. 52 will be assigned to observation and directed teaching in the classes of the high school. The facilities of the school are available to the college classes in special methods and to other classes for demonstration purposes. (MTWThF I, II, III, IV.)

### SUMMER DEMONSTRATION ELEMENTARY SCHOOL

An elementary school, grades one to six inclusive, will be in operation during the first term of the Summer Session. This school will be staffed by the principal and teachers of the Tuttle School which is used as the demonstration elementary school of the College of Education by a co-operative agreement with the Board of Education of the city of Minneapolis. The school, conducted on an activity basis, may be observed by students of elementary school methods and supervision. A laboratory course in elementary school practices is available. (See Ed.C.I. 186su.) (MTWThF I, II, III, IV; Tuttle School, Talmadge Avenue and Eighteenth Avenue Southeast.)

### NURSERY SCHOOL AND KINDERGARTEN

The Institute of Child Welfare maintains a nursery school and kindergarten in the first term of the Summer Session which is open to children under the conditions described on page 133. These schools are also available for demonstration and observation. Courses, offered by the institute and listed on page 133, are given for teachers who wish nursery school and kindergarten training and for others interested in child development.

### MINIMUM FEE FOR GRADUATE STUDENTS

Graduate students who have completed all their graduate work with the exception of the thesis will be allowed to register for the Summer Session for thesis work only, upon the payment of a fee of \$5 plus a \$2 deposit.

### SPECIAL FEES

By action of the Board of Regents, a fee of \$1 per credit is charged for all courses concerned with methods or problems of teaching. These fees are used in the provision of demonstration and practice facilities, and are charged for any course in this classification, whether or not observation is required for that particular course. The curriculum laboratory, the demonstration schools, and radio and visual materials are partially provided through these fees.

### DETAILED DESCRIPTION OF COURSES

For detailed description of courses and curricula in education see the Bulletin of the College of Education.

### NOTICE CONCERNING STARRED COURSES

Graduate students who wish to work on individual problems to count toward the nine credits in problems courses required for the Master's degree under Plan B, may register for this credit in any course starred in the following list. Other students taking these courses will not be held to the same quality of individual problems work, nor will written reports always be required of them. (See page 16.)

### GENERAL COURSES

#### FIRST TERM

- Ed.51Asu.‡ Introduction to Secondary School Teaching. (3 cred.; jr. sr.; prereq. Ed.51C or consent of instructor; MTWThF V; 210UHS.) Mr. Schrupp.  
 Ed.51Bsu.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed.51A or consent of instructor; MTWThF VII; 209NH.) Mr. G. Lester Anderson.  
 Ed.51Csu.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWThF VI; 122NH.) Mr. Mitchell.

#### SECOND TERM

- Ed.51Asu.‡ Introduction to Secondary School Teaching. (3 cred.; jr. sr.; prereq. Ed.51C or consent of instructor; MTWThF V; 210UHS.) Mr. Van Wagenen.  
 Ed.51Bsu.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed.51A or consent of instructor; MTWThF VI; 209NH.) Mr. G. Lester Anderson.  
 Ed.51Csu.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWThF VII; 210UHS.) Mr. Mitchell.

‡ A fee of \$1 per credit is charged for this course.



Ed.81su. Introduction to Education for Public Health Nurses. Not open to candidates for a degree in the College of Education. (3 cred.; MTWThF VI; ar.; MeS.) Miss Grout.

## AGRICULTURAL EDUCATION

### FIRST TERM

Agr.Ed.82su.‡ Methods in Teaching Agriculture. Fundamentals of method in teaching as related to teaching agriculture in high school. Organizing subject matter of daily work; selection and manipulation of devices. Classroom and laboratory method. Specific plans for teaching secondary school agriculture. (3 cred.; sr.; prereq. 81; MTWThF II; 301Hort(UF).) Mr. Field.

Agr.Ed.121su. Enterprise Analysis. A course intended primarily for teachers of agriculture and others who have had training and experience in planning farming programs. Emphasis is given to the farm management approach as a method in the development of farming programs. (1 to 3 cred.; MTWThF VI; 301Hort(UF).) Mr. Peterson.

Agr.Ed.221su. Field Problems. Provision for study and development of special problems in the field of the student's individual choice. (3 cred.; ar.; 205Hort(UF).) Mr. Field, Mr. Peterson.

Agr.Ed.232su.\* Research in Agricultural Education. Introduction to investigation in problems of teaching agriculture in the high schools. Experience in selecting problems, preparation of bibliographies, analyzing and interpreting data, and preparing manuscripts. Designed especially for meeting the Plan B research requirements. (3 cred.; ar.; 205Hort(UF).) Mr. Field, Mr. Peterson.

Agr.Ed.237su. Adult Education in Agriculture. The organization, objectives, and technics for conducting part-time and evening schools for farmers and out-of-school farm youth. (1 to 3 cred.; MTWThF III; 301Hort(UF).) Mr. Peterson.

### SECOND TERM

Agr.Ed.54su. Rural Education and Community Leadership. The rural school as a community center, technics of obtaining community data and organizing educational and recreational resources. Functions of clubs, fairs, festivals, farmer participation in experiments and other features of a community activities program. (2 cred.; ar.; 301Hort(UF).) Mr. Peterson.

Agr.Ed.91su.‡ Supervised Teaching Experience. Observation and participation in learning-teaching process. Preparation of lesson plans and actual teaching under supervision of selected teachers, organization and execution of the activities necessary to successful teaching. (5 cred.; ar.) Mr. Peterson.

Agr.Ed.104su. Planning Programs. Long-time and annual plans for departments of vocational agriculture. Schedule of activities, analyzing results. (2 cred.; sr.; prereq. 82; ar.; 301Hort(UF).) Mr. Field.

Agr.Ed.221su. Field Problems. Provision for study and development of special problems in the field of the student's individual choice. (3 cred.; ar.; 205Hort(UF).) Mr. Field, Mr. Peterson.

Agr.Ed.232su.\* Research in Agricultural Education. Introduction to investigations in problems of teaching agriculture in the high schools. Experience in selecting problems, preparation of bibliographies, analyzing and interpreting data, and preparing manuscripts. Designed especially for meeting the Plan B research requirements. (3 cred.; ar.; 205Hort(UF).) Mr. Field, Mr. Peterson.

‡ A fee of \$1 per credit is charged for this course.

## ART EDUCATION

In addition to professional courses, the department offers a variety of basic courses in creative art essential for the broad training of art teachers for elementary schools, secondary schools, colleges and other educational positions. The Art Education curriculum provides opportunities to combine creative art careers with a teaching position, a combination popular with many outstanding contemporary artists.

The basic art courses are open to students in Fine Arts, Social Work, Home Economics, and other departments and colleges which require art training. Many courses are also open for purposes of general education and recreation.

Graduate students interested in courses counting towards a Master's degree in Art Education should consult the advisers for details.

## FIRST TERM

- ArtEd.1su. General Design. Problems in art structure emphasizing the use of line, texture, area, color. Skills basic to work in pictorial composition, handcrafts, photography, interior design, and commercial art. (3 cred.; no prereq.; MTWF III-IV and Th III; 104J.) Mrs. Torbert.
- ArtEd.18su. Survey of Art in Life and Education. For elementary, child welfare, and other education majors; others by permission. A combination lecture and laboratory course for the layman, destined to develop understanding and appreciation of aspects of art important in contemporary living. (3 cred.; no prereq.; MTWThF VI-VII; 109J.) Mr. Gayne.
- ArtEd.24A,B,Csu. Water Color Painting. (2 cred.; prereq. 6, 8, or equiv., or consent of instructor; MTWF V-VI; 207aJ.) Mrs. Rollins.
- ArtEd.26A,B,Csu. Oil Painting. (2 cred.; prereq. 4 cred. in Basic Drawing, equiv., or consent of instructor; MTWF I-II; 207bJ.) Mr. Booth.
- ArtEd.28A,B,Csu. Advanced Drawing Techniques. (2 cred.; prereq. 6, 8, or equiv., or consent of instructor; MTWF V-VI; 207bJ.) Mrs. Rollins.
- ArtEd.31su. General Handcrafts. An introductory course for teachers, recreation leaders, occupational therapists, and others interested in craft possibilities inherent in wood, metal, clay, and scrap materials. (3 cred.; no prereq.; MTWThF I-II; 10J.) Mr. Thomas.
- ArtEd.61su. Figure Drawing and Painting. (2 cred.; prereq. 12 cred. in Drawing and Painting, equiv., or consent of instructor; MTWF III-IV; 207bJ.) Mr. Booth.
- ArtEd.63su. Landscape Drawing and Painting. (2 cred.; prereq. 12 cred. in Drawing and Painting, equiv., or consent of instructor; MTWF III-IV; 207bJ.) Mr. Booth.
- ArtEd.68A,B,Csu. Print Processes: Lithography, silk screen, block print, etc. (2 cred.; prereq. 12 cred. in Drawing and Painting, equiv., or consent of instructor; MTWF III-IV; 203aJ.) Mrs. Rollins.
- ArtEd.75su.‡ Metal. Problems in aluminum, copper, tin, and precious metals selected according to students' needs and interests. Emphasis on design expressed through three dimensional materials. (3 cred.; prereq. consent of instructor; MTWThF VI-VII; 10J.) Mr. Thomas.
- ArtEd.76su.‡ Textiles: Fundamental Weaving. (3 cred.; prereq. consent of instructor; MTWThF VII and 1 hr. ar.; 11J.) Miss Berglund.
- ArtEd.77su.‡ Textiles: Advanced Weaving. (3 cred.; prereq. consent of instructor; MTWThF VIII and 1 hr. ar.; 11J.) Miss Berglund.
- ArtEd.78su.‡ Textile Design: Weaving. (3 cred.; prereq. consent of instructor; MTWThF VI and 1 hr. ar.; 11J.) Miss Berglund.

‡ A fee of \$1.50 is charged for this course.

- ArtEd.124Esu. Advanced Specialized Drawing and Painting. (Cred. ar.; grad.; hrs. ar.) Mrs. Rollins.
- ArtEd.153Esu. Home Design in Society and Education. Lectures, readings, discussions exploring relationships between art and society. (3 cred.; jr., sr., grad.; prereq. consent of instructor; MTWThF VII; 104J.) Mrs. Torbert.
- ArtEd.184su.‡‡ Advanced Course in Methods and Supervision of Art in the Elementary School. (3 cred.; sr., grad.; prereq. 51C-A-B or 61C-A-B, or consent of instructor; MTWThF IV; 109J and observation in Tuttle Demonstration School.) Mr. Gayne.
- ArtEd.284Esu. Reading and Research in Art Education. (Cred. ar.; grad.; hrs. ar.) Mr. Gayne and staff.
- ArtEd.295Esu. Special Problems in Art Education. Including technical art projects involving advanced studio practice. (Cred. ar.; grad.; hrs. ar.) Mr. Gayne and staff.

## SECOND TERM

- ArtEd.2su. General Design. Problems in art structure emphasizing the use of line, texture, area, color. Skills basic to work in pictorial composition, handcrafts, photography, interior design, and commercial art. (3 cred.; prereq. ArtEd. 1, equiv., or consent of instructor; MTWThF II-III; 104J.) Mrs. Torbert.
- ArtEd.4su. Basic Drawing: Introduction to Materials and Techniques. (2 cred.; no prereq.; MTWTh VIII-IX; 207aJ.) Mr. Wiggin.
- ArtEd.51su. Introduction to Industrial Design. Brief survey and typical technical experiences with emphasis on relationships between professional practice and art education. (3 cred.; prereq. 6 cred. in General Design, equiv., or consent of instructor; MTWThF III-IV; 109J.) Mr. Wiggin.
- ArtEd.67Bsu. Illustration for Advertising and Other Purposes. Emphasis on techniques suitable for newspaper and magazine illustration. (2 cred.; prereq. 12 cred. in Drawing and Painting, equiv., or consent of instructor; MTWTh VII-VIII; 109J.) Mr. Wiggin.
- ArtEd.70A,B,Csu.‡ Wood Sculpture and Carving. (3 cred.; prereq. consent of instructor; MTWF III-IV and Th III; 10J.) Mr. Rood.
- ArtEd.73A,B,Csu.‡ Ceramics. (3 cred.; prereq. consent of instructor; MTWThF I-II; 10J.) Mr. Rood.
- ArtEd.170Esu.‡ Advanced Wood Sculpture and Carving. (Cred. ar.; grad.; prereq. consent of instructor; hrs. ar.; 10J.) Mr. Rood.
- ArtEd.173Esu.‡ Advanced Ceramics. (Cred. ar.; grad.; prereq. consent of instructor; hrs. ar.) Mr. Rood.

## CURRICULUM AND INSTRUCTION

## FIRST TERM

*General Courses*

- Ed.C.I.104su.‡‡ Adult Education. (3 cred.; jr., sr., grad.; MTWThF IV; 209UHS.) Mr. Nolte.
- Ed.C.I.105su.‡‡ Visual Aids in Teaching. (3 cred.; jr., sr., grad.; MTWThF VII; 101WeH.) Mr. Wendt.
- Ed.C.I.106su.‡‡ Coordinating of Visual Education Programs. (3 cred.; jr., sr., grad.; MTWThF VI; 101WeH.) Mr. Wendt.
- Ed.C.I.114su.‡‡ The School Health Education Program. (3 cred.; sr., grad.; prereq. Ed.T. 83, P.H. 50 or equiv.; MTWThF III; 201NGW.) Miss Starr.

‡ A fee of \$1.50 is charged for this course.

‡‡ A fee of \$1 per credit is charged for this course.

- Ed.C.I.129su.‡ Principles and Problems of Teaching Social Hygiene. Emphasis will be placed on methods of teaching social hygiene in the public schools and materials for instructional use in the elementary and secondary schools. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed.; MTWThF III; 360SBH.) Dr. Pearce, Mr. Griffiths.
- Ed.C.I.145su.‡ Remedial Reading. (3 cred.; prereq. Ed.C.I. 143, or 144 or 159; MTWThF IV; 106NH.) Mr. Bond, Mr. Tinker.
- Ed.C.I.172su.‡§ Workshop in Curriculum Problems—Minneapolis Group. Jointly planned and sponsored by the Minneapolis Public Schools and the College of Education. Problems in curriculum development at the elementary and secondary level with group and individual projects planned to meet the needs, interests, and specializations of the registrants. Open to selected Minneapolis teachers and a limited number of students from outside Minneapolis. Consultants available for problems in child development, elementary and secondary curriculum, and the various subject fields for elementary and secondary schools. Admission by consent of the director, Dr. Walter Anderson, general assistant superintendent, Minneapolis Public Schools, and the College of Education Workshop Committee. Students may register for 3 to 9 credits or may be listed for 3 hours as auditors. The entire workshop group will be scheduled for the first 4 weeks with a maximum of 6 credits, and those who wish to complete 9 credits will continue working with the staff for the following two weeks. (3 to 9 cred.; MTWThF, 9:00 to 4:00, June 16 to July 11 and hours ar. July 14 to 25; Marshall High School.) Mr. Walter Anderson, Miss Bostwick, Miss Cutright, Mr. Gilchrist, Mr. Goslin, Miss Lange, Miss Dora V. Smith, visiting lecturers and consultants.
- Ed.C.I.172su.‡§ Workshop in Curriculum Problems—Experimental Schools. Specially planned for elementary and secondary teachers in the experimental curriculum study under the College of Education. Group and individual projects for curriculum development at the elementary and secondary levels. Admission by consent of the director, Mr. Nelson L. Bossing. (6-9 cred.; MTWThF, 9:00 to 4:00; 1121 S.E. 5th St.) Mr. Bossing, Mr. Dutton, Mr. Grim, Mr. McLaughlin, Miss Melendy, Mr. Shailer Peterson, and consultants.
- Ed.C.I.271su.\*‡ Problems in Curriculum Construction. (Cred. ar.; prereq. cred. or current enrolment in Ed.C.I. 113, 119, 170, or equiv., and consent of instructor; ar.) Mr. Walter Anderson, Mr. Bossing, Mr. Cook, Mr. Gilchrist.
- Ed.C.I.273su.\*‡ Problems in Reading. (Cred. ar.; prereq. consent of instructor; W V; 106NH.) Mr. Bond, Mr. Tinker.

#### *Elementary Education†*

- Ed.C.I.59su.‡ Speech in the Elementary Grades. Discussion of the development of good speech habits for elementary school children and the identification and handling of speech difficulties in the elementary schoolroom. (3 cred.; jr., sr.; prereq. Ed. 71A-B or teaching experience, course in fundamentals of speech recommended; MTWThF VI; 106UHS.) Mrs. Chapman.
- Ed.C.I.102su.‡ Teaching the Social Studies in the Elementary School. (3 cred.; prereq. Ed. 71A-B-C or equiv.; MTWThF IV; 209NH.) Mr. English.
- Ed.C.I.103su.‡ Teaching of Science in the Elementary School. Emphasis on resources and materials, and their application in elementary grades. (3 cred.; sr., grad.; prereq. Ed. 71A-B or teaching experience; MTWThF III; 209NH.) Mr. Croxton.
- Ed.C.I.119su.‡ Elementary School Curriculum. (3 cred.; sr., grad.; prereq. Ed. 71C or equiv.; MTWThF IV; 106Pt.) Mr. Garner.

† Special attention is called to courses for teachers of the deaf, offered under the Speech Department: Speech 125, Speech for the Deaf; and Speech 127, Language Training for the Deaf.

‡ A fee of \$1 per credit is charged for this course.

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

- Ed.C.I.130su.‡ Problems in Childhood Education. (See Child Welfare 150su.) (3 cred.; sr., grad.; prereq. 12 cred. in ed.; MTWThF IV; 5Pt.) Mrs. Fuller.
- Ed.C.I.131su.‡§ Laboratory in Childhood Education and Child Development—Workshop. Credit will be allowed toward kindergarten or elementary education major. (Also listed as C.W. 186su.) For details see page 134. (9 cred.; sr., grad.; prereq. permission of director of Institute of Child Welfare; MTWThF I-III; 5Pt.) Mrs. Fuller, Miss Headley, Miss Peterson.
- Ed.C.I.143su.‡ Teaching and Supervision of Reading in the Elementary School. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 71A or equiv.; MTWThF II; 106Pt.) Mr. Bond.
- Ed.C.I.149su.‡ The Teaching and Supervision of Arithmetic in the Elementary School. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed.51A or 71A; MTWThF I; 107NH.) Mr. Harry Johnson.
- Ed.C.I.150su.‡ Supervision and Improvement of Instruction. (3 cred.; sr., grad.; prereq. Ed.71C or equiv.; MTWThF III; 106Pt.) Mr. Harry Johnson.
- Ed.C.I.153su.‡ Supervision and Teaching of English in the Elementary Schools. (3 cred.; sr., grad.; prereq. Ed. 71A-B-C or equiv.; MTWThF II; 100Pt.) Mr. Archer.
- Ed.C.I.186su.‡ Laboratory in Elementary Instructional Practices. Daily observation of elementary classes with discussion of techniques, emphasis on activity units, visual aids, enriched materials, individual differences, and socialized situations. Students enrolling in this course must carry at least one other course in the College of Education. (2 cred.; experienced teachers only; observation 4 hrs. weekly, MTWThF ar., Tuttle School; lect. TTh VI; 109UHS.) Mr. Staudenmaier.
- Ed.C.I.263su.\*‡ Research in Arithmetic Instruction. (3 cred.; prereq. Ed.C.I. 148 or 149 or equiv. and consent of instructor; ar.) Mr. Harry Johnson.

#### *Secondary Education*

- Ed.C.I.113su.‡ High School Curriculum. (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51A-B-C or equiv.; MTWThF VII; 216NH.) Mr. Garner.
- Ed.C.I.122su.‡ Literature for Adolescents. (3 cred.; jr., sr., grad.; prereq. Ed. 51C or junior-senior high school teaching experience; MTWThF IV; 206UHS.) Mr. George Robert Carlsen.
- Ed.C.I.136su.‡ Organization and Supervision of Distributive Education Programs. (3 cred.; sr., grad.; MTWThF I and II, first three weeks, June 16 to July 4; 110UHS.) Mr. Baker.
- Ed.C.I.137su.‡ Materials and Methods in Distributive Education Programs. (3 cred.; sr., grad.; MTWThF V and VI, first three weeks, June 16 to July 4; 110UHS.) Mr. Meyer.
- Ed.C.I.140su.‡ Teaching of Speech. (Also listed as Speech 151su.) Orientation in problems of speech education. Review of studies of teaching methods and special devices, voice recordings, tests. Direction of extra-curricular activities. (3 cred.; jr., sr., grad.; prereq. Speech 1-2-3 or Speech 5-6 or equiv. or permission of instructor; MTWThF III; 308F.) Mr. Gilkinson.
- Ed.C.I.141su.‡ Cooperative Part-Time Distributive Education Classes. (3 cred.; sr., grad.; MTWThF V and VI, second three weeks, July 6 to 25; 110UHS.) Mr. Browning.
- Ed.C.I.142su.‡ Evening Distributive Education Classes. (3 cred.; sr., grad.; MTWThF I and II, second three weeks, July 6 to 25; 110UHS.) Mr. Meyer.

‡ A fee of \$1 per credit is charged for this course.

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

- Ed.C.I.144su.‡ Teaching of Reading in Junior and Senior High Schools. (3 cred.; sr., grad.; prereq. 9 hrs. in ed. including Ed. 51A; MTWThF III; 106NH.) Mr. Tinker.
- Ed.C.I.168su.‡ Current Developments in the Social Studies. (3 cred.; grad. only; MTWThF IV; 110UHS.) Mr. Maynard.
- Ed.C.I.191su.‡ Advanced Course in the Teaching and Supervision of Secondary School Mathematics. (3 cred.; prereq. Ed. 51B or permission of instructor; MTWThF V; 105UHS.) Mr. Donovan Johnson.
- Ed.C.I.194su.‡ Curriculum Making in the Language Arts in Grades 7 through 14. (3 cred.; sr., grad.; MTWThF I; 209UHS.) Miss Smith.
- Ed.C.I.201su.\*‡ Problems in Teaching the Social Studies. (3 cred.; grad.; prereq. consent of instructor; MTWThF II; 122NH.) Mr. English.
- Ed.C.I.266su.‡ Supervision of High School Instruction. (3 cred.; grad.; MTWThF IV; 16ShH.) Mr. Keller.
- Ed.C.I.287su.‡ Advanced Course in the Teaching of Science. (3 cred.; sr., grad.; prereq. 51C; MTWThF VI; 3UHS.) Mr. Croxton.
- Ed.C.I.296su.\*‡ Special Problems in Teaching English. (Cred. ar.; grad.; ar.) Miss Smith.

#### Higher Education

- Ed.C.I.228su.\*‡§ Workshop: Problems of Higher Education and Teacher Training. (6 cred.; grad.; MTWThF ar., June 9 to July 4; Center for Continuation Study.) Mr. Cooper, Miss Eckert, Mr. Clippenger, Mr. Furrow, Mr. Ward, and consultants.

#### SECOND TERM

##### General Courses

- Ed.C.I.105su.‡ Visual Aids in Teaching. (3 cred.; jr., sr., grad.; MTWThF IV; 101WeH.) Mr. Luce.
- Ed.C.I.107su.‡ Radio in Education. (3 cred.; jr., sr., grad.; MTWThF III; 302MurH.) Mr. Tyler.
- Ed.C.I.117su.‡ Rural Education for Administrators and Teachers. (3 cred.; sr., grad.; prereq. consult instructor; MTWThF II; 303-304HE(UF).) Mr. Archer.
- Ed.C.I.145su.‡ Remedial Reading. (3 cred.; prereq. Ed.C.I. 143 or 144 or 159; MTWThF VI; 16ShH.) Mr. Bond.
- Ed.C.I.271su.\*‡ Problems in Curriculum Construction. (Cred. ar.; prereq. completion or current enrolment in one of the following: Ed.C.I. 113, 119, 170 or consent of instructor; ar.) Mr. Bossing, Mr. Cook.
- Ed.C.I.273su.\*‡ Problems in Reading. (Cred. ar.; prereq. consent of instructor; ar.) Mr. Bond.

##### Elementary Education

- Ed.C.I.102su.‡ The Teaching of the Social Studies in the Elementary Grades. (3 cred.; prereq. Ed. 71A-B-C or equiv.; MTWThF II; 210UHS.) Mr. Wesley.
- Ed.C.I.103su.‡ Teaching of Science in the Elementary School. (3 cred.; sr., grad.; prereq. Ed. 71A-B or teaching experience; MTWThF I; 207NH.) Mr. Kenneth Anderson.
- Ed.C.I.119su.‡ Elementary School Curriculum. (3 cred.; sr., grad.; prereq. Ed. 61C or equiv.; MTWThF III; 106Pt.) Mr. Harry Johnson.
- Ed.C.I.143su.‡ Teaching and Supervision of Reading in the Elementary School. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 71A or equiv.; MTWThF IV; 210UHS.) Mr. Bond.

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

‡ A fee of \$1 per credit is charged for this course.

- Ed.C.I.150su.‡ Supervision and Improvement of Instruction. (3 cred.; sr., grad.; prereq. Ed. 71C or equiv.; MTWThF VI; 210UHS.) Mr. Harry Johnson.
- Ed.C.I.187su.‡§ Workshop in Rural and Village School Problems. Students in the workshop must also be registered for Ed.C.I. 117su, Rural Education for Administrators and Teachers, 3 credits, which will be used as a core course in connection with the workshop. Special group and individual projects in the workshop will supplement the core course, emphasizing the problems of the registrants and the improvement of rural teaching. Limited to thirty students. (6 cred.; prereq. permission of the dean of the College of Education; not open to those who have received credit in Ed.C.I. 187 or 188 in previous sessions; MTWThF 10 to 4; 303-304HE(UF).) Mr. Archer, Miss Clark.

### *Secondary Education*

- Ed.C.I.113su.‡ High School Curriculum. (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51A-B-C or equiv.; MTWThF II; 16ShH.) Mr. Bossing.
- Ed.C.I.139su.‡ Coordination Techniques in Business Education. (3 cred.; sr., grad.; MTWThF III; 105UHS.) Mr. Meyer.
- Ed.C.I.168su.‡ Current Developments in the Social Studies. (3 cred.; MTWThF IV; 209UHS.) Mr. Maynard.
- Ed.C.I.170Bsu.‡ Curriculum and Course of Study Construction. (3 cred.; sr., grad.; prereq. Ed.C.I. 113 or 119 or consent of instructor; MTWThF I; 16ShH.) Mr. Bossing.
- Ed.C.I.204su.‡ Social Studies Curriculum. (3 cred.; grad.; MTWThF III; 209UHS.) Mr. Wesley.
- Ed.C.I.238su.\*‡ Problems in Distributive Education. (3 cred.; grad.; prereq. consent of instructor; MTWThF IV; 105UHS.) Mr. Meyer.
- Ed.C.I.266su.‡ Supervision of High School Instruction. (3 cred.; grad.; MTWThF III; 16ShH.) Mr. Umstatt.

## EDUCATIONAL ADMINISTRATION

### FIRST TERM

#### *General Courses*

- Ed.Ad.124su. Public School Administration. The organization, administration, and general support of public schools in state and local school districts. (3 cred.; sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 209NH.) Mr. Oppenheimer.
- Ed.Ad.210su.\* Financial Aspects of School Business Administration. Financial program planning, budgeting, accounting, cost finding, income and expenditure control, and the preparation and analysis of financial reports. (3 cred.; grad.; prereq. Ed.Ad. 124 and 125 or 225; MTWThF II; 17ShH.) Mr. Holy.
- Ed.Ad.225su. Pupil Personnel Administration. Child accounting records and reports, attendance department, school census, pupil adjustment and progress, pupil health and safety and legal aspects of pupil personnel administration. (3 cred.; grad.; prereq. 15 hrs. in ed. including Ed.Ad. 124; MTWThF III; 122NH.) Mr. Cramer.
- Ed.Ad.226su. School Plant Planning and Management. Plant program planning and financing, including operation and maintenance of public school buildings. (3 cred.; grad.; prereq. Ed.Ad. 124 and 125 or 225; MTWThF IV; 17ShH.) Mr. Holy.
- Ed.Ad.227su. Teacher and Employee Administration. Employment practices, salary schedules, personnel records and reports, welfare procedures, improvement in service and

‡ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

‡ A fee of \$1 per credit is charged for this course.

legal aspects of instructional and non-instructional school employee administration. (3 cred.; grad.; prereq. 15 hrs. in ed. including Ed.Ad. 124; MTWThF I; 17ShH.) Mr. Domian.

Ed.Ad.228su.\* Special Problems in Educational Administration. For the summer of 1947 this course will deal with recent research in the field of school administration. Superintendents may work on research problems in connection with their own school systems. (1 to 6 cred.; grad.; prereq. Ed.Ad. 124, 125; TWTh IV; 100Pt.) Mr. Neale.

Ed.Ad.230su.\* Public Relations for Schools. Theory and practice of educational interpretation. Principles involved; machinery and personnel; the teacher's contacts with the community; the role of the pupil; professional and lay organization; techniques and mediums of educational interpretation. Layout; news and feature writings, radio broadcasting, bulletins and reports, exhibits, special occasions. (3 cred.; grad.; MTWThF III; 17ShH.) Mr. Domian.

Ed.Ad.235su. Seminar in Educational Administration. Required of all candidates for Master's degrees under Plan A and of all candidates for Ph.D. degrees. (No credit; prereq. consent of instructor. Time and place to be ar.) Mr. Neale.

Ed.Ad.280su. Conference on Current Problems of School Administration in Minnesota. Discussion of such problems as salary schedules, financing of education, improvement of instruction, induction of new teachers, supervisory organization, teacher demand and supply. (No cred.; auditors only; June 30 to July 3, MTWTh VI-VII; 210UHS.) Mr. Goslin, Mr. Neale, Mr. Thomas.

#### *Elementary Education*

Ed.Ad.115su. Organization of the Elementary School. Problems relating to the organization for instruction and classification of pupils in elementary schools with critical examination of current practices. (3 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 202NH.) Mr. Cramer.

#### *Secondary Education*

Ed.Ad.133su. Guidance in Secondary Schools. (Also listed as Ed.Psy. 133.) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; MTWThF III; 210P.) Mr. Dugan.

Ed.Ad.167su. Junior High School. (Not offered.) Elementary education majors who need this course for junior high school endorsement should substitute Ed. 51C. (See page 102.)

Ed.Ad.263su. The Organization of the Secondary School. (3 cred.; grad.; MTWThF III; 16ShH.) Mr. Keller.

Ed.Ad.264su. The Administration of the Instructional Activities of the Secondary School. (3 cred.; grad.; MTWThF II; 16ShH.) Mr. Drake.

Ed.Ad.265su. The Administration of the Non-instructional Activities of the Secondary School. (3 cred.; grad.; MTWThF I; 16ShH.) Mr. Drake.

Ed.Ad.270su.\* Special Problems in Secondary Education. (Cred. ar.; prereq. consent of instructor; ar.) Mr. Drake.

#### *Higher Education*

Ed.Ad.274su. The Junior College. Organization and control, faculty and employee personnel administration, administrative relationships to problems of curriculum and instruction. (3 cred.; grad.; MTWThF III; 110UHS.) Mr. Oppenheimer.



## SECOND TERM

*General Courses*

- Ed.Ad.124su. Public School Administration. (3 cred.; sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 210UHS.) Mr. Neale.
- Ed.Ad.210su.\* Financial Aspects of School Business Administration. (3 cred.; grad.; prereq. Ed.Ad. 124 and 125 or 225; MTWThF I; 17ShH.) Mr. Domian.
- Ed.Ad.225su. Pupil Personnel Administration. (3 cred.; grad.; prereq. 15 hrs. in ed.; including Ed.Ad. 124; MTWThF III; 122NH.) Mr. Cramer.
- Ed.Ad.226su. School Plant Planning and Management. (3 cred.; grad.; prereq. Ed.Ad. 124 and 125 or 225; MTWThF III; 210UHS.) Mr. Domian.
- Ed.Ad.227su. Teacher and Employee Administration. (3 cred.; grad.; prereq. 15 hrs. in ed. including Ed.Ad. 124; MTWThF III; 17ShH.) Mr. Thompson.
- Ed.Ad.228su.\* Special Problems in Educational Administration. (1-6 cred.; grad.; prereq. Ed.Ad. 124, 125, 127; TWTh IV; 109UHS.) Mr. Neale.
- Ed.Ad.230su.\* Public Relations for Schools. (3 cred.; grad.; MTWThF IV; 17ShH.) Mr. Thompson.
- Ed.Ad.235su. Seminar in Educational Administration. Required of all candidates for Master's degrees under Plan A and for all Ph.D. degree candidates with a major in general school administration. (No cred.; prereq. consent of instructor. Time and place to be ar.) Mr. Neale.

*Elementary Education*

- Ed.Ad.115su. Organization of the Elementary School. (3 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 107NH.) Mr. Cramer.

*Secondary Education*

- Ed.Ad.133su. Guidance in Secondary Schools. (Also listed as Ed.Psy. 133su.) (3 cred., sr., grad.; prereq. 9 cred. in ed.; MTWThF I; 209NH.) Mr. Dugan.
- Ed.Ad.167su. Junior High School. (Not offered.) Elementary education majors who need this course for junior high school endorsement should substitute Ed. 51C. (See page 102.)
- Ed.Ad.264su. The Administration of the Instructional Activities of the Secondary School. (3 cred.; grad.; MTWThF IV; 16ShH.) Mr. Umstatt.
- Ed.Ad.270su.\* Special Problems in Secondary Education. (Cred. ar.; prereq. consent of instructor; ar.) Mr. Umstatt.

## EDUCATIONAL PSYCHOLOGY

## FIRST TERM

*General Courses*

- Ed.Psy.60su. Introduction to Statistical Methods. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWThF VI; 17ShH.) Mr. Van Wagenen.
- Ed.Psy.120su. Basic Principles of Measurement. (3 cred.; sr., grad.; prereq. Ed.Psy. 60 or equiv.; MTWThF II; 216NH.) Mr. Cook.
- Ed.Psy.140su. Instruments and Techniques of Measurement. (3 cred.; sr., grad.; prereq. 120 or equiv.; MTWThF IV and ThF V; 107NH.) Mr. Cook.
- Ed.Psy.150su. Psycho-Educational Clinic. (3 to 6 cred.; sr., grad.; prereq. Ed.Psy. 120, 140 and 141 or 142 and consent of instructor; ar.) Mr. Tinker.
- Ed.Psy.159su. Personality Adjustments in Education. (3 cred.; sr., grad.; prereq. 9 hrs. in ed. and psy. including one recent course in psy.; MTWThF I; 106Pt.) Mr. Walter Johnson.

- Ed.Psy.208su.\* Methods in Educational Research. (3 cred.; grad.; MTWThF VI; 16ShH.) Mr. Palmer O. Johnson.
- Ed.Psy.216su. Statistical Methods in Education. (3 cred.; grad.; MTWThF VII; 106Pt.) Mr. Palmer O. Johnson.
- Ed.Psy.225su.\* Diagnosis and Counseling in a Student Personnel Program. (3 cred.; grad.; prereq. Ed.Psy. 133 and 140 or consent of instructor; MTWThF II; 106NH.) Mr. Wrenn.
- Ed.Psy.233su.\* Problems in Guidance and Personnel Work. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. Wrenn.
- Ed.Psy.253su.\* Research Problems. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. G. Lester Anderson, Mr. Cook, Mr. Palmer O. Johnson, Mr. Van Wagenen, Mr. Wrenn.
- Ed.Psy.281su. Practice in Personnel Work: Guidance Clinic. (3 cred.; grad.; limited enrolment, admission by consent of instructor only; ar.; 101EdH.) Mr. Darley.
- Ed.Psy.293su.\* Psychology of Learning. (3 cred.; grad.; prereq. 12 cred. in psy. and ed. psy.; MTWThF VI; 209NH.) Mr. G. Lester Anderson.

#### *Elementary Education*

- Ed.Psy.113su. Psychology of Elementary School Subjects. (3 cred.; jr., sr., grad.; prereq. 10 cred. in psy. and ed.; MTWThF V; 17ShH.) Mr. Van Wagenen.

#### *Secondary Education*

- Ed.Psy.133su. Guidance in Secondary Schools. (3 cred.; sr., grad.; prereq. 9 cred. in ed.; MTWThF III; 210P.) Mr. Dugan.
- Ed.Psy.281su. Practice in Personnel Work. For graduate students interested in personnel work in secondary schools. (3 cred.; prereq. consent of instructor; ar.) Mr. Dugan.

#### SECOND TERM

#### *General Courses*

- Ed.Psy.60su. Introduction to Statistical Methods. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWThF II; 106Pt.) Mr. Palmer O. Johnson.
- Ed.Psy.120su. Basic Principles of Measurement. (3 cred.; sr., grad.; prereq. Ed.Psy. 60 or equiv.; MTWThF II; 209NH.) Mr. Cook.
- Ed.Psy.159su. Personality Adjustments in Education. (3 cred.; sr., grad.; prereq. 9 hrs. in ed. and psy. including one recent course in psy.; MTWThF IV; 209NH.) Mr. Bell.
- Ed.Psy.217su. Statistical Methods in Education. (3 cred.; grad.; MTWThF I; 106Pt.) Mr. Palmer O. Johnson.
- Ed.Psy.226su.\* Diagnosis and Counseling in a Student Personnel Program. (3 cred.; grad.; prereq. Ed.Psy. 133, 140, and 225 or consent of instructor; MTWThF II; 122NH.) Mr. Bell.
- Ed.Psy.233su.\* Problems in Guidance and Personnel Work. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. Bell, Mr. Cook, Miss Edwards.
- Ed.Psy.253su.\* Research Problems. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. G. Lester Anderson, Mr. Cook, Mr. Palmer O. Johnson, Mr. Van Wagenen.
- Ed.Psy.293su.\* Psychology of Learning. (3 cred.; grad.; prereq. 12 cred. in psy. and ed. psy.; MTWThF VII; 209NH.) Mr. G. Lester Anderson.

#### *Elementary Education*

- Ed.Psy.183su. Education of Gifted Children. (3 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.; MTWThF VI; 209UHS.) Mr. Van Wagenen.

*Secondary Education*

- Ed.Psy.133su. Guidance in Secondary Schools. (Also listed as Ed.Ad. 133su.) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; MTWThF I; 209NH.) Mr. Dugan.
- Ed.Psy.158su. Psychology of Adolescence. (3 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.; MTWThF VII; 107NH.) Miss Edwards.
- Ed.Psy.281su. Practice in Personnel Work. (3 cred.; prereq. consent of instructor; ar.) Mr. Dugan.

## HISTORY AND PHILOSOPHY OF EDUCATION

## FIRST TERM

*General Courses*

- H.Ed.140su. Philosophies of Modern Education. (3 cred.; sr., grad.; no prereq.; MTWThF VI; 100Pt.) Mr. Brameld.
- H.Ed.155su. History of Education in the United States. Emphasis on the development of elementary and secondary education in the nineteenth century; special movements; rise of state school systems. (3 cred.; jr., sr., grad.; MTWThF III; 109UHS.) Miss Alexander.
- H.Ed.180su. The School and the Social Order. (3 cred.; jr., sr., grad.; prereq. 6 hrs. in psy.; MTWThF V; 106Pt.) Mr. Brameld.

## SECOND TERM

*General Courses*

- H.Ed.176su. Conflicting Issues in Modern Education. (3 cred.; jr., sr., grad.; prereq. 6 hrs. in psy.; MTWThF IV; 107NH.) Mr. Cary.
- H.Ed.180su. The School and the Social Order. (3 cred.; jr., sr., grad.; prereq. 6 hrs. in psy.; MTWThF III; 209NH.) Mr. Cary.

## HOME ECONOMICS EDUCATION

## FIRST TERM

- H.E.Ed.191su. Advanced Course in the Teaching of Home Economics. A study of materials, equipment, and teaching procedures based on newer concepts of learning and changing social and economic needs of families. This course offers the experienced teacher an opportunity to study problems related to her own situation at the secondary or higher educational level. (3 cred.; sr., grad.; prereq. H.E.Ed. 91, 93, or consent of instructor; MTWThF III and 1 hr. ar.; 114HE(UF).) Miss Rose.
- H.E.Ed.194Asu. Adult Education in Home Economics. An analysis and study of the problems affecting community and family living; methods and techniques used in helping men and women and out-of-school youth meet present situations. Course is planned for teachers and supervisors of adult classes, extension and farm security workers. (3 cred.; sr., grad.; prereq. H.E.Ed. 91, 93, or parallel; MTWThF II and 1 hr. ar.; 106HE(UF).) Ar.
- H.E.Ed.194Bsu. Adult Education in Home Economics. Objectives of adult education to meet present needs; planning a community program; teaching procedures, discussion of special problems. Course is planned for teachers and supervisors of adult classes. (3 cred.; sr.; prereq. H.E.Ed. 91, 93, or parallel; MTWThF IV and 1 hr. ar.; 106HE(UF).) Ar.
- H.E.Ed.243su. Trends in Home Economics. A study of the development of home economics in the educational program and the influencing factors; the ways in which

objectives, content, and procedures are being modified to meet changing conditions. (3 cred.; grad.; prereq. permission of instructor; MTWThF VI and 1 hr. ar.; 114HE(UF).) Miss Rose.

#### SECOND TERM

H.E.Ed.295su.‡§ Problems in Home Economics Education: Workshop. Opportunity will be offered to faculty members from colleges, universities, and teacher training institutions to study problems of evaluation. Group discussions and individual conferences will be provided. The Workshop will be scheduled for four weeks, July 29-August 23. Only a limited number of students can be accepted and anyone interested should write at once to Professor Clara Brown Army, University Farm, St. Paul 1, Minnesota. No person may register as an auditor although credit is optional. (6 cred.; grad.; hrs. ar.; 114HE(UF).) Mrs. Clara Brown Army, Mrs. Dorothy Schnell.

### INDUSTRIAL EDUCATION

#### FIRST TERM

- Ind.10su. Basic Electricity. (3 cred.; no prereq.; required of undergraduate majors; MTWThF VI-VII; 6Pt.) Mr. Nelson.
- Ind.11su.‡ Special-Class Woodwork. (3 cred.; no prereq.; for teachers of art, elementary, handicapped, therapy, and recreation groups; MTWThF I-II; 6Pt.) Mr. Nelson.
- Ind.50A-B-Csu.‡ Directed Teaching. (3 cred. A, B, or C; 6 cred. required for B.S. degree; prereq. Ind. 70 or 75 and 80 with C+ average in manipulative and professional Industrial Education courses; 10 periods per week, consult instructor; 6Pt.) Mr. Nelson.
- Ind.60su. Philosophy of Vocational Education. (3 cred.; no prereq.; MTWThF III; 6aPt.) Mr. Widdowson.
- Ind.80su. General Industrial Training. (3 cred.; no prereq.; not a shop course; MTWThF II; 6aPt.) Mr. Pickens.
- Ind.102su. The General Shop. (3 cred.; jr., sr., grad.; prereq. Ind. 80 or consent of instructor; MTWThF IV; 6aPt.) Mr. Pickens.
- Ind.108su. Apprenticeship. (3 cred.; jr., sr., grad., or consent of instructor; MTWThF I; 6aPt.) Mr. Widdowson.
- Ind.135su. Industrial Course Construction. (3 cred.; jr., sr., grad.; not open to those with credit in Ind. 40-42; combines analysis and course organization; MTWThF III; 100Pt.) Mr. Micheels.
- Ind.200su.\* Research Problems. (3, 6, or 9 cred.; grad.; individual conferences about independent papers under Plan B for the M.A. degree and Plan Y for the M.Ed. degree; conference hours MTWThF IV and by appointment; 200EdH.) Mr. Micheels.
- Dunwoody—Shopwork and Drawing. Arranged by Mr. Micheels.

#### SECOND TERM

- Ind.1su. Basic Woodwork. (3 cred.; no prereq.; required of undergraduate majors in place of M.E. 1; MTWThF VI-VII; 6Pt.) Mr. Nelson.
- Ind.44su. Equipment and Management. (3 cred.; prereq. Ind. 40-42; MTWThF II; 6aPt.) Mr. Widdowson.
- Ind.50A-B-Csu.‡ Directed Teaching. (See description under First Term.) Mr. Nelson.
- Ind.70su.‡ Methods in Shop Subjects. (3 cred.; prereq. Ind. 40-42; MTWThF I; 6aPt.) Mr. Micheels.

‡ A fee of \$1 per credit is charged for this course.

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate programs.

- Ind.101su. Tests in Industrial Subjects. (3 cred.; prereq. Ed. 51, Educational Psychology; MTWThF III; 6aPt.) Mr. Micheels.
- Ind.109su. Conference Leading for Industry. (3 cred.; prereq. consent of instructor; MTWThF IV; 6aPt.) Mr. Widdowson.
- Ind.172su. Part-Time Education. (3 cred.; jr., sr., grad.; prereq. Ind. 170-171 or consent of instructor; MTWThF II; 209UHS.) Mr. Smith.
- Ind.200su.\* Research Problems. (See description under First Term.) Mr. Smith and Mr. Micheels.
- Dunwoody—Shopwork and Drawing. Arranged by Mr. Smith.

*Shopwork and Drawing—Both Terms*

In selecting shop and drawing courses, in addition to those listed above, students should read other parts of this bulletin, as follows: Agricultural Engineering, Architecture, Art Education, Drawing and Descriptive Geometry, Fine Arts, Mechanical Engineering and other divisions of the Institute of Technology. The long-time cooperative arrangement with Dunwoody Industrial Institute continues in effect. First degree candidates should keep in mind the maximum of 45 quarter credits in shopwork and drawing combined. More credits may be earned and recorded, but they will not be counted toward the degree. Advanced students may earn such credits also, but without possibility of their use in graduate programs.

*Notes*

A copy of the four-year curriculum which leads to the B.S. degree will be mailed upon request. Mimeographed statements are available also concerning the program requirements and patterns for the M.A. degree in the Graduate School and for the M.Ed. degree in the College of Education. Persons who desire more advanced work are invited to open correspondence about their backgrounds and professional intentions.

Early consideration should be given to the filing of transcripts from all institutions attended since high school completion. Those desiring to enter the Graduate School should request an "Application for Admission" and should return it promptly with duplicate transcripts.

There is the possibility of acceptance in transfer of a maximum of nine quarter credits (six semester credits) at the Master's level. Ph.D. programs are based upon the first degree, and all credits earned subsequently are considered as to their appropriateness for use in major and minor lists of courses to be approved.

The University of Minnesota is designated by the State Board for Vocational Education for the offering of courses leading to certification for positions aided under the Smith-Hughes, George-Deen, and allied acts and regulations.

Bulletins of the College of Education and of the Graduate School may be obtained from the Office of Admissions and Records, Administration Building. Letters of inquiry should be addressed to the Department of Industrial Education, 200 Eddy Hall, University of Minnesota, Minneapolis 14, Minnesota.

## METHODS AND DIRECTED TEACHING

### FIRST TERM

#### *Elementary Education*

- Ed.T.55su.‡ Principles of Early Childhood Education. (3 cred.; jr., sr.; prereq. Psy. 1-2; MTWThF I and 1 hr. ar.; 100Pt.) Miss Peterson.
- Ed.T.56su.‡ Methods and Observation in the Nursery School and Kindergarten. (5 cred.; jr.; prereq. Psy. 1-2, Ed.T. 55 concurrently; W IV and observation hrs. ar.; 204EPt.) Miss Headley, Miss Peterson.

‡ A fee of \$1 per credit is charged for this course.

- Ed.T.57su.‡ Nursery School-Kindergarten Laboratory in Art, Literature, and Social Studies. (5 cred.; jr.; prereq. Ed.T. 55, 56; W IV and observation hrs. ar.; 204EPt.) Miss Headley.
- Ed.T.58su.‡ Nursery School-Kindergarten Laboratory in Permanent Play Materials, Music, and Science. (3 cred.; jr.; prereq. Ed.T. 55, 56, 57; W IV and observation hrs. ar.; 204EPt.) Miss Peterson.
- Ed.T.77A or Csu.‡‡ Directed Teaching. Offered by special arrangement on advance application to a limited number of students. (4 cred.; sr.; prereq. Ed.T. 55, 56, 57, 58; ar.) Mrs. Fuller.
- Ed.T.78su.‡ Workshop in Childhood Education. Credit will be allowed toward nursery school, kindergarten, or elementary education major. Also listed as C.W. 86su. For further details see page 133. (2 cred.; jr., sr.; permission of director of Institute of Child Welfare; I-III; 5Pt.) Mrs. Fuller, Miss Headley, Miss Peterson.

### Secondary Education

- Ed.T.52su.‡‡ Practice Teaching. Open to students who wish to register for a limited number of credits in practice teaching to qualify for the secondary school certificate through the College of Education. (Cred. ar.; prereq. consent of instructor; ar.; UHS.) Mr. Grim.
- Ed.T.66Amsu.‡‡ The Teaching of Composition in Secondary Schools. (2 cred.; sr.; MTWThF VI; 206UHS.) Mr. George Robert Carlsen.
- Ed.T.66Bmsu.‡‡ The Teaching of Literature in Secondary Schools. (2 cred.; sr.; MTWThF VII; 206UHS.) Mr. George Robert Carlsen.
- Ed.T.67Am,Bmsu.‡‡ The Teaching of Secondary School Mathematics. (4 cred.; sr.; MTWThF V and individual work ar.; 105UHS.) Mr. Donovan Johnson.
- Ed.T.68Am,Bmsu.‡‡ Methods of Teaching Secondary School Science. (3 cred.; sr.; MTWThF VI; 3UHS.) Mr. Croxton.
- Ed.T.69Am,Bmsu.‡‡ Methods of Teaching History and Social Studies. (4 cred.; sr.; MTWTh VI-VII; 209UHS.) Mr. McLendon.

### SECOND TERM

- Ed.T.83su.‡ Methods and Materials of School Health Education. (3 cred.; sr.; prereq. P.H. 3, 4, 59; MTWThF IV; 201NGW.) Miss Starr.

### MUSIC EDUCATION

#### FIRST TERM

- Mu.Ed.4,5,6su.‡ Applied Instrumental Technique. (2 cred. each; no prereq. MTWThF I; 4NMA.) Mr. Ivory.
- Mu.Ed.50Asu.‡ Primary Methods. (2 cred.; jr.; no prereq.; MTWF IV; 4Mu.) Mrs. Stanchfield.
- Mu.Ed.68su. Conducting of Instrumental Music and Survey of Materials. (4 cred.; sr.; prereq. Mu.Ed. 65; MTWThF V-VI; 4NMA.) Mr. Ivory.
- Mu.Ed.103Esu.§ Psychological Foundations of Music Education. (3 cred.; sr., grad.; prereq. consent of instructor; MTWThF III; 4Mu.) Mr. Winslow.
- Mu.Ed.150Esu.§‡ Elementary Music Education Workshop. (3 cred.; sr., grad.; prereq. Mu.Ed. 50A,B, or equiv. or consent of instructor; MTWThF II; 4Mu.) Mr. Winslow, Mr. Ivory, Mrs. Stanchfield.

‡ Students registering for this course must make out the application required for methods courses and directed teaching. Forms are available in the office of the assistant dean, 202 Burton Hall.

‡ A fee of \$1 per credit is charged for this course.

§ Courses marked "E" carry credit toward the master of education degree.

Mu.Ed.220Esu.§ Survey and Evaluation of Research in Music Education. (3 cred.; open to candidates for the M.Ed. degree in music education and others with consent of instructor; ar.) Mr. Winslow.

Mu.Ed.225Esu.††§ Advanced Applied Music. (Cred. ar.; prereq. entrance examination; ar.) Ar.

## SECOND TERM

Mu.Ed.4, 5, 6su.‡ Applied Instrumental Technique. (2 cred. each; no prereq. MTWThF I; 4NMA.) Mr. Ivory and Mr. Prescott.

Mu.Ed.50Asu.‡ Primary Methods. (2 cred.; jr.; no prereq.; MTWTh III; 3Mu.) Mr. Winslow.

Mu.Ed.50Bsu.‡ Intermediate Methods. (2 cred.; prereq. Mu.Ed. 50A or equiv.; MTWF IV; 3Mu.) Mr. Winslow.

Mu.Ed.63su.‡ Band Conducting. (2 cred.; jr., sr.; prereq. Mu.Ed. 4-5-6; MTWThF II; 4NMA.) Mr. Prescott.

Mu.Ed.64su.‡ Band Organization. (3 cred.; jr., sr.; prereq. Mu.Ed. 4-5-6; MTWThF III; 4NMA.) Mr. Prescott.

Mu.Ed.65su.‡ Instrumentation. (3 cred.; jr.; prereq. Mu. 4-5; MTWThF V; 2Mu.) Mr. Ivory.

Mu.Ed.224Esu.§ Seminar and Individual Research Problems in Music Education. (Cred. ar.; prereq. consent of instructor; ar.) Mr. Winslow.

‡ A fee of \$1 per credit is charged for this course.

†† Two lessons a week, fee \$30; four lessons a week, fee \$60.

§ Courses marked "E" carry credit toward the master of education degree.

# PHYSICAL EDUCATION AND ATHLETICS

## PHYSICAL EDUCATION FOR MEN

### FIRST TERM

Nonprofessional Courses (count towards the Physical Education requirement in those colleges requiring three credits and elective in other colleges).

1Asu. Beginning Swimming. (1 cred.; no prereq.; MTWThF VI; Rec. Pool, CH.) Mr. Boyce.

2Asu. Advanced Swimming and Water Safety. (1 cred.; prereq. ability to swim 50 yards; MTWThF VIII; Vars. Pool, CH.) Mr. Boyce.

Professional Courses (carrying credit toward the major, minor, and State Department of Education 9 qtr. hr. requirement in Physical Education).

4A,B,Csu. Fundamentals of Football, Basketball, and Track. (3 cred.; no prereq.; MTWThF 7:30-9:00 a.m., CH and Northrop Field.) Mr. Bierman, Mr. Kelly, Mr. MacMillan.

5Bsu. Gymnastic Apparatus and Tumbling. (1 cred.; no prereq.; MTWThF VII; Gym CH.) Mr. Shawbold.

5Csu. Physical Education Activities—Stunts, Softball, Contests. (1 cred.; no prereq.; MTWThF VI; Gym CH.) Mr. Shawbold.

6Csu. Intramural Sports—Aquatics. (1 cred.; prereq. ability to swim 100 yards; MTWThF VII; Vars. Pool, CH.) Mr. Boyce.

7Csu. Recreational Games and Sports—Badminton, Archery, Table Tennis, Deck Tennis, Horseshoes, Bowling. (1 cred.; no prereq.; MTWThF V; Gym CH.) Mr. Shawbold.

8su. Tennis and Golf. Students furnish own golf equipment and tennis balls. (1 cred.; no prereq.; MF VIII-IX, W IX; 215CH.) Mr. Piper, Mr. Smith.

9su. Rhythms—Social and American Country Dancing. (1 cred.; no prereq.; TTh VIII-IX; Union Ballroom; W VIII, 215CH.) Mr. Piper.

50su. Human Anatomy. A study of the structure of the human body with emphasis upon the bones, nerves, and muscles and their significance in physical education. (3 cred.; soph.; no prereq.; MTWThF IV; 206CH.) Mr. Osell.

51su. Mechanics of Movement. A discussion of the principles and mechanics of body movements; the effect of various exercises upon the tissues and organs of the body. (3 cred.; jr., sr.; prereq. P.E.M. 50; MTWThF II; 206CH.) Mr. Osell.

60su. Athletic Training and Treatment of Injuries. Policies for conditioning of athletes in interscholastic and intercollegiate sports, safety controls, care and prevention of injuries in physical education. (3 cred.; soph., jr., sr.; no prereq.; MTWThF V and 1 hr. ar.; 206CH.) Mr. Stein.

63su. Organization and Administration of Physical Education. Problems of organization, administration, and supervision in required and elective courses, intramural and inter-school athletics. (3 cred.; jr., sr.; MTWThF VI; 215CH.) Mr. Piper.

67,68,69su. Coaching of Football, Basketball, Track (2 weeks each). Study of the theory, strategy, and generalship. Styles of offense and defense, methods of organizing practice, conduct of meets, practice schedules, etc. (3 cred.; jr., sr.; MTWThF II; 215CH.) Mr. Bierman, Mr. Kelly, Mr. MacMillan.

73,74,75su.‡ Directed Teaching. An opportunity for practice in teaching Physical Education activity classes. (2 cred.; sr.; prereq. permission of director of student teaching in College of Education; W V and 10 hrs. ar.; 214CH.) Mr. Piper.

‡ A fee of \$1 per credit is charged for this course.



- 101su. Principles of Physical Education. A study of the aims, scope, and biological aspects of physical education with special consideration of the place of physical activity in education. (3 cred.; jr., sr., grad.; MTWThF I; 215CH.) Mr. Keller.
- 103su. Physical Examination and Adaptation of Activities. The physical educator's responsibility in diagnosis, amelioration, and correction of physical abnormalities. (3 cred.; jr., sr., grad.; prereq. P.E.M. 50, 51; MTWThF III; 206CH.) Mr. Osell.
- 131Esu. Industrial Recreation. Scope, place, and relationship of management, employee, and labor in relation to organization and administration of a recreation program for industrial workers. (3 cred.; sr., grad.; MTWThF I; 206CH.) Mr. Haislet.
- 136Esu. Leadership in Community Recreation. A study of problems of leadership in community recreation; finance, coordination of existing agencies promoting recreation facilities, activities, and public relations. (3 cred.; sr., grad.; MTWThF II; 214CH.) Mr. Haislet.
- 234su. The Secondary School and College Curriculum in Physical Education. Theory and principles of program construction applied to physical education. Critical analysis of existing programs and evaluation of activities in the light of modern trends. Practical application of principles in the construction of a program for a specific situation. (3 cred.; grad.; MTWThF IV; 215CH.) Mr. Nordly.
- 238su. The Administration of Physical Education in Colleges and Universities. A study of the problems connected with the administration of the facilities and programs in physical education and athletics in institutions of higher education. (3 cred.; grad.; MTWThF III; 214CH.) Mr. Keller.
- 247su. Problems in Health Education, Physical Education and Recreation. Individual projects and conferences related thereto. (Cred. and hrs. ar.; grad.) Mr. Nordly.
- 250su. The Administration of Health Education, Physical Education, and Recreation. (3 cred.; grad.; MTWThF III, 215CH.) Mr. Nordly.

## SECOND TERM

- Nonprofessional Courses (count towards the Physical Education requirement in those colleges requiring three credits and elective in other colleges.)
- 1Bsu. Beginning Swimming. (1 cred.; no prereq.; MTWThF VII; Rec. Pool CH.) Mr. Boyce.
- 2Bsu. Advanced Swimming. (1 cred.; prereq. ability to swim 50 yards; MTWThF VIII, Vars. Pool CH.) Mr. Boyce.
- Professional Courses (carrying credit toward the major, minor, and State Department of Education 9 qtr. hr. requirement in Physical Education).
- 5Asu. Physical Education Activities—Conditioning Drills, Story Plays, Posture Exercises, Tumbling. (1 cred.; no prereq.; MTWThF VIII; Gym CH.) Mr. Shawbold.
- 6Asu. Intramural Sports—Soccer, Speedball, Volleyball. (1 cred.; no prereq.; MTWThF V; Gym CH and Northrop Field.) Mr. Shawbold.
- 6Csu. Intramural Sports—Aquatics. (1 cred.; prereq. ability to swim 100 yards; MTWThF VI; Vars. Pool CH.) Mr. Boyce.
- 7Asu. Recreational Games and Sports—Low Organized Games, Social Games. (1 cred.; no prereq.; MTWThF VII; Gym CH.) Mr. Shawbold.
- 7Bsu. Boxing and Wrestling. (1 cred.; no prereq.; MTWThF IV; 204Stad.) Mr. Haislet, Mr. Bartelma.
- 32su. Introduction to Physical Education. An orientation course for teachers. History, vocational significance, and fundamental principles of physical education. (3 cred.; no prereq.; MTWThF IV; 215CH.) Mr. Keller.

- 51su. Mechanics of Movement. A discussion of the principles and mechanics of body movements; the effect of various exercises upon the tissues and organs of the body. (3 cred.; prereq. P.E.M. 50; MTWThF II; 206CH.) Mr. Osell.
- 53,54,55su.‡ Methods in Physical Education. Application of the principles of methodology to physical education, analysis and study of the techniques of measurement devices for grading and classifying pupils. Technique of lesson planning. (4 cred.; jr.; prereq. 6 cred. in activity courses or equiv.; MTWThF III and 5 hrs. ar.; 215CH.) Mr. Bartelma.
- 73,74,75su.‡ Directed Teaching. An opportunity for practice in teaching Physical Education activity classes. (2 cred.; prereq. permission of director of student teaching in the College of Education; M V and 6 hrs. ar.; 215CH.) Mr. Bartelma.
- 135su. Tests and Measurements in Physical Education. Critical analysis of existing research studies in physical education with special emphasis upon tests and measurements. Study of existing tests from both practical and theoretical standpoints. Use of tests in the administration of physical activity programs. Application of the principles of test construction to specific problems. (3 cred.; sr., grad.; MTWThF III; 214CH.) Mr. Keller.
- 141Esu. Administration and Supervision of Public Recreation. Organization of public recreation; policies and procedures relating to recreation; finance; the activity program, facilities, office management, promotion and public relations. (3 cred.; sr., grad.; MTWThF VI; 215CH.) Mr. Haislet.
- 142Esu. Group Leadership and Community Organization for Recreation. Inquiry into the nature, scope, principles, and procedures in community organization, with attention to those principles and practices of group leadership that have particular reference to community organization work. (3 cred.; sr., grad.; MTWThF VII; 215CH.) Mr. Haislet.
- 233su. Special Administrative Problems in Physical Education in Secondary Schools. Survey of staff organizations in typical situations such as small towns, cities, states, and schools; construction, maintenance, and policies for use of facilities; purchase, care, and use of equipment; legal aspects of physical education and athletic activities. (3 cred.; grad.; MTWThF I; 215CH.) Mr. Nordly.
- 236su. Recent Literature and Research in Physical Education and Recreation. Directed readings and class discussions of recent literature; critical analysis of research in physical education and recreation; selection and presentation of an outline for the solution of a problem. (3 cred.; grad.; MTWThF II; 215CH.) Mr. Nordly.
- 247su. Problems in Health Education, Physical Education, and Recreation. Mr. Nordly.

## PHYSICAL EDUCATION FOR WOMEN

### TEACHING QUALIFICATIONS

Those interested in teaching physical education in the state of Minnesota must qualify in one of the following professional programs:

1. Courses applying to the nine-credit endorsement for teaching in the state of Minnesota are: Phys.Ed. 4, 10, 11, 13, 16, 18, 21, 37, 41, 52, 53, 61, 64, 65, 73, and 84.
2. Courses applying to the state minor in physical education are: Phys.Ed. 4, 10, 11, 13, 16, 18, 21, 37, 41, 51, 52, 53, 61, 64, 65, 73, 84, 90, 116, and Ed.T. 83.
3. Courses applying to the undergraduate major in physical education are: Phys.Ed. 10, 13, 18, 21, 37, 41, 61, 64, 65, 73, 84, Ed.T. 83, and Ed.C.I. 114, 116E.
4. Courses applying to the degree of master of education with a major in physical education are: Phys.Ed. 111E, 112E, 113E, 116E, and Ed.C.I. 114.

‡ A fee of \$1 per credit is charged for this course.

## STUDENT TEACHING

The opportunity of teaching in the University Demonstration School is presented to those who can satisfy the one-credit student teaching requirement of the minor, only in the Summer Session. Integration of the physical education program with the regular classroom program is featured wherever possible. Student teaching in the form of directed observation, assistance, and substitution for the regular teacher is carefully supervised.

## FACILITIES FOR RECREATION

The swimming pool is open for recreational use from 3:00 to 5:00 p.m. Monday through Friday during both the first and second terms.

The university tennis courts and the university golf course are open to students.

## FEES

The rental fee for suits and towels for swimming is 10 cents apiece. The charges for tennis are \$1 for each term and for golf 50 cents for 18 holes (45 cents if one buys a coupon book of ten tickets). Towels for shower bath may be procured from the matron for 5 cents apiece.

The maximum course fee for students taking two or more courses in physical education is \$3.50 per term.

## PHYSICAL EXAMINATION

It is recommended that every woman student avail herself of the opportunity offered by the Students' Health Service for a physical examination. Everyone, but especially a teacher, should know her health status. The Department of Physical Education for Women strongly urges every person who is taking one or more activity courses to make an appointment at once for a physical examination at the Health Service. Health Service approval must be secured for participation in swimming classes, recreational swimming, team sports and modern dance.

## FIRST TERM

- 1su.‡ A Course in Personal Conditioning. Meets the requirement for college credit. (½ cred.; no prereq.; MWF V; 151NGW.) Miss Birmingham.
- 4su.‡ Fundamentals of All Rhythmic Work. (1 cred.) (Not offered first term.)
- 7su.‡ Tennis for Beginners. This course is open to those with little or no experience in tennis. Instruction will include the service, forehand drive, backhand drive, rules and etiquette of the game. Individual coaching will be stressed. Students are required to furnish own rackets and balls. (½ cred.; no prereq.; MWF V; 151NGW.) Miss Birmingham.
- 8su.‡ Golf for Beginners. (½ cred.) (Not offered first term.)
- 9su.‡ Elementary-Intermediate Golf. (½ cred.) (Not offered in 1947.)
- 10su.‡ Teachers' Course in Fundamentals of Physical Education. (1 cred.) (Not offered first term.)
- 11su.‡‡ Modern Dance. Elementary modern dance skills usable in an average high school. Simple adaptations of modern principles of composition. (1 cred.; no prereq.; MTWTh V and 1 hr. ar.; 151NGW.) Miss Bell.
- 12su.‡ Social Recreation—Ballroom and Country Dance and Mixers. Ballroom dance skills and country dances selected for use in high school teaching. Simple mixers for social groups will be included. (1 cred.; no prereq.; MTWTh VIII and 1 hr. ar.; 151NGW.) Ar.

† Health Service approval must be secured for participation in this course.

‡ A fee of \$1.75 is charged for this course.

- 13su.‡ Tumbling, Stunts, and Pyramids for Junior and Senior High Schools. Instruction and practice in technique of individual, companion, and group tumbling and stunts with progression from elementary to more advanced. Discussion and application of principles underlying pyramid building. Self-testing activities and track and field events for girls of junior and senior high school age. (1 cred.; no prereq.; MTWTh VII and 1 hr. ar.; 153NGW.) Ar.
- 16su.‡ Elementary Tap and Social Dancing. (1 cred.) (Not offered in 1947.)
- 18su.‡ Elementary Folk Dancing and Games. (1 cred.) (Not offered first term.)
- 21su.‡‡ Team Sports. Team Sports such as Soccer, Speedball, Volleyball, Basketball, Softball. The high school girls' sports most desired by the class will be stressed. (1 cred.; no prereq.; MTWTh II and 1 hr. ar.; 153NGW.) Miss Rugh.
- 32su.‡‡ Elementary Swimming. This course is for those who are unable to swim in deep water. Instruction is given in the following aquatic skills: orientation activities, water safety skills, crawl, side stroke and backstroke, and diving for those who desire it. (1 cred.; no prereq.; MTWThF VI; 58NGW.) Miss Eibner.
- 33su.‡‡ Intermediate and Advanced Swimming. This is a course for those who can swim in deep water. Instruction in the following is included: the crawl, side stroke and back crawl, personal water safety skills, diving. The class will be divided into groups according to the ability, interests, and experience of the swimmers. (1 cred.; prereq. permission of instructor; MTWThF VII; 58 NGW.) Miss Eibner.
- 37su.‡ Individual and Dual Games. This course deals with the various methods and techniques suitable for the teaching of the following sports: table tennis, archery, badminton, deck tennis, tether ball, shuffleboard. Consideration of group methods adaptable to the organization and teaching of these activities on the junior and senior high school level. This course consists of lectures and laboratory work. (1 cred.; no prereq.; MTWF I and 1 hr. ar.; 153NGW.) Ar.
- 41su.‡‡ Intermediate and Advanced Modern Dance. Modern dance skills and composition will be adapted to intermediate and advanced groups in high school. Some help will be given on organization and types of emphases for modern dance clubs. (1 cred.; prereq. 11su or equiv.; MTWTh VII and 1 hr. ar.; 151NGW.) Miss Bell.
- 51su.‡ School Health and Safety Education. (2 cred.) (Not offered in 1947.)
- 52su. Principles and Curriculum of Physical Education. (2 cred.) (Not offered in 1947.)
- 53su. Organization and Administration of Physical Education. (2 cred.) (Not offered in 1947.)
- 61ABsu.‡‡ Technique of Teaching Team Sports. Special techniques for each sport and methods of teaching. Organization of extra-curricular activities. Practice in skills and student teaching within the group. (2 cred.; prereq. 21 and 41 or permission of instructor; MTWThF IV; 151NGW.) Miss Rugh.
- 64su. Technique of Teaching Group Gymnastics. (1 cred.) (Not offered first term.)
- 65su.‡‡ Technique of Teaching Individual Sports. Methods and materials for teaching the individual sports which are suitable for a girls' program of physical education on the secondary level. Progression, lead-up games, conduct of tournaments and special methods of organization are particularly stressed. Sports requested by class members will be given special emphasis. (1 cred.; prereq. 21 or 41 or permission of instructor; MTWThF VII; 153NGW.) Ar.
- 73Asu.‡‡ Technique of Teaching Rhythm. (1 cred.) (Not offered first term.)
- 73Bsu. Technique of Folk Dancing. (Not offered in 1947.)
- 83su. Methods and Materials for School Health Education. (Not offered first term.)

† Health Service approval must be secured for participation in this course.

‡ A fee of \$1.75 is charged for this course.

‡‡ A fee of \$1 per credit is charged for this course.

- 84su.‡‡ Problems in Physical Education. A study of curricular problems in the field of physical education carried on by individuals or groups. The emphasis is on the secondary and high school levels. (2 cred.; prereq. experience on elementary or secondary levels; MTWTh VI; 3NGW.) Ar.
- 90su.‡‡ Student Teaching. An opportunity of teaching elementary school children and assisting in college classes will be provided for those who must meet a student teaching requirement in the summer. (1 cred.; prereq. permission of instructor: hrs. ar.) Ar.
- 112Esu.§ Supervision of Physical Education. (3 cred.) (Not offered in 1947.)
- 113Esu.§ Physical Education in the Elementary Schools. The course deals with problems at the elementary school level: those of the child, or the classroom teacher, of planning, of instruction, and of evaluation. (3 cred.; MTWThF II; 201NGW.) Miss Baker.
- 114Esu.§ The School Health Education Program. Study of various health organizations in city and state in relation to the school health program; organization of the health education programs in the school; construction of the curriculum in school health; evaluation of the school health program; preparation and requirements for teaching school health education; health supervision and guidance. (3 cred.; sr., grad.; prereq. Ed.T. 83, P.H. 50 or equiv., or consent of instructor; MTWThF III; 201NGW.) Miss Starr.
- 116Esu.§ Problems in Physical Fitness. (1 to 3 cred.) (Not offered first term.)

## SECOND TERM

- 1su.‡ A Course in Personal Conditioning. Meets the requirement for college credit. ( $\frac{1}{2}$  cred.; no prereq.; MWF V; 151NGW.) Miss Robb.
- 4su.‡ Fundamentals of All Rhythmic Work. The fundamental elements of rhythm are applied to all types of rhythmic activity usable in the grades and junior high school; special applications are made to rhythms for little children, folk and tap dancing, and ballroom dancing. Includes some reference to methods of approach. Not a skills course primarily. (1 cred.; no prereq.; MTWTh VI; 151NGW.) Miss Bockstruck.
- 8su.‡ Golf for Beginners. Limited to 20. ( $\frac{1}{2}$  cred.; no prereq.; TTh V and 1 hr. ar.; 60NGW.) Miss Robb.
- 10su.‡ Teachers' Course in Fundamentals of Physical Education. The fundamentals of skill in balance, timing, force, and direction are applied to games and self-testing activities. Study of the use of underlying principles in teaching activities. Emphasis will be placed upon motor experiences to develop a perspective on activity in general as well as the resulting outcomes, e.g., posture. (1 cred.; no prereq.; MTWTh VII and 1 hr. ar.; 153NGW.) Ar.
- 12su.‡ Social Recreation—Ballroom and Country Dance and Mixers. Ballroom dance skills and country dances selected for use in high school teaching. Simple mixers for social groups will be included. (1 cred.; no prereq.; MTWTh VII and 1 hr. ar.; 151NGW.) Ar.
- 18su.‡ Elementary Folk Dancing and Games. This course presents graded material primarily for those teaching in the elementary and secondary school. Consideration is given to methods of organizing and teaching activities at different levels. (1 cred.; no prereq.; MTWTh III and 1 hr. ar.; 151NGW.) Miss Bockstruck.
- 32su.‡‡ Elementary Swimming. Class instructions given. This course is for those who are unable to swim in deep water. Instruction is given in the following aquatic skills: orientation activities, water safety skills, crawl, side stroke and backstroke, and diving for those who desire it. (1 cred.; no prereq.; MTWThF VI; 58NGW.) Miss Eibner.

† Health Service approval must be secured for participation in this course.

§ Courses marked "E" carry credit toward the degree of master of education.

‡ A fee of \$1.75 is charged for this course.

‡‡ A fee of \$1 per credit is charged for this course.

- 33su.†‡ Intermediate and Advanced Swimming. This is a course for those who can swim in deep water. Instruction in the following is included: the crawl, side stroke and back crawl, personal water safety skills, diving. The class will be divided into groups according to the ability, interests, and experience of the swimmers. (1 cred.; prereq. permission of instructor; MTWThF VII; 58NGW.) Miss Eibner.
- 37su.‡ Individual and Dual Games. (Not offered second term.)
- 52su. Principles and Curriculum of Physical Education. (Not offered in 1947.)
- 53su. Organization and Administration of Physical Education. (2 cred.) (Not offered in 1947.)
- 64su.‡‡ Technique of Teaching Group Gymnastics. A study is made of the principles of progression and methods of teaching gymnastics. Student teaching is done within the group. (1 cred.; prereq. permission of instructor; MTWTh V and 1 hr. ar.; 153NGW.) Ar.
- 65su. Technique of Teaching Individual Sports. (2 cred.) (Not offered second term.)
- 73Asu. Technique of Teaching Rhythm. A study of the methods of teaching all types of rhythmic activities. Opportunity will be given to class members to apply the methods to different types of dance. (1 cred.; prereq. equiv. of 21 and 41 or permission of instructor; MTWTh II and 1 hr. ar.; 151NGW.) Miss Bockstruck.
- 83su.‡‡ Methods and Materials for School Health Education. Study of principles, materials, and problems of health education in preparation for health teaching. Observation in techniques of school health instruction. Allocation and gradation of health subject matter, study of health needs of school children. Evaluation of school health instruction. (3 cred.; prereq. permission of instructor; MTWF IV and 1 hr. ar.; 201NGW.) Miss Starr.
- 84su. Problems in Physical Education. (2 cred.) (Not offered second term.)
- 111Esu.§ An Advanced Course in Methods of Teaching Physical Education. (3 cred.) (Not offered in 1947.)
- 112Esu.§ Supervision of Physical Education. (3 cred.) (Not offered in 1947.)
- 113Esu.§ Physical Education in the Elementary Schools. (3 cred.) (Not offered second term.)
- 114Esu.§ The School Health Education Program. (3 cred.) (Not offered second term.)
- 115Esu.§ Philosophy and Trends in Physical Education. A course showing present trends and problems in physical education that would be of special interest to other health workers in the school besides the physical educator. This course is therefore not open to professional students in physical education. (3 cred.; MTWThF III; 201NGW.) Miss Starr.
- 116Esu. Problems in Physical Fitness. Analysis of current physical fitness problems on the elementary, secondary, and college levels in relation to health, physical education, recreation, and education. Undergraduates with sufficient background in physical education may register for the course. The number of credits allowed will depend upon the type of individual problem studied. (1 to 3 cred.; MTWThF VI; 201NGW.) Miss Robb.

† Health Service approval must be secured for participation in this course.

§ Courses marked "E" carry credit toward the degree of master of education.

‡ A fee of \$1.75 is charged for this course.

‡‡ A fee of \$1 per credit is charged for this course.

# SCHOOL OF BUSINESS ADMINISTRATION

## GENERAL INFORMATION

### ADMISSION

For admission to the School of Business Administration a student must have satisfied the requirements of one of the two-year prebusiness courses, either in the College of Science, Literature, and the Arts, the College of Agriculture, Forestry, and Home Economics, or the Institute of Technology. A student must have a minimum of 90 credits, with one honor point per credit or a smaller number of credits determined as follows: For every five honor points in excess of one per credit, the number 90 is diminished by one.

### SPECIAL STUDENTS

High school graduates who have reached the age of twenty-four and can furnish evidence that they have had business experience in an executive capacity may be admitted as special students. If later they decide to become candidates for a degree, they must complete the requirements for admission.

### STUDENTS IN OTHER SCHOOLS OR COLLEGES OF THE UNIVERSITY

Regularly enrolled students in other schools or colleges of the University may be admitted to such courses in the School of Business Administration as are authorized by the faculties of the School of Business Administration and the school or college concerned. Such students are urged to select their business subjects in accordance with a definite plan, and as far as possible to complete a systematic course of business study.

NOTE—Special provision has been made this summer for the direction of graduate students working on theses. For further information inquire at the office of the dean of the School of Business Administration.

An *asterisk* (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 16.)

### FIRST TERM

Econ.3su. 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. (3 cred.; 2nd and 3rd qtr. fr., soph., jr., sr.; no prereq.) Mr. Graves and others.

Sec. 1, MTWThF I, 205VH

Sec. 2, MTWThF I, 221VH

Sec. 3, MTWThF II, 205VH

Sec. 4, MTWThF II, 221VH

Sec. 5, MTWThF III, 205VH

Sec. 6, MTWThF III, 221VH

Sec. 7, MTWThF IV, 205VH

Sec. 8, MTWThF IV, 6VH

Sec. 9, MTWThF V, 205VH

Sec. 10, MTWThF VI, 205VH

Sec. 11, MTWThF VI, 221VH

Sec. 12, MTWThF VII, 205VH

Econ.5su.§ Elements of Statistics. Elementary concepts in statistical methods; averages, ratios, errors, sampling, index numbers, graphic representation, collection of material. (3 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq.) Mr. Belcher and others.

Sec. 1, MTWThF I, 6VH

Sec. 2, MTWThF I, 2VH

Sec. 3, MTWThF II, 112VH

Sec. 4, MTWThF II, 113VH

Sec. 5, MTWThF III, 6VH

Sec. 6, MTWThF III, 2VH

Sec. 7, MTWThF IV, 2VH

Sec. 8, MTWThF IV, 105VH

Sec. 9, MTWThF V, 6VH

Sec. 10, MTWThF VI, 6VH

Sec. 11, MTWThF VI, 2VH

Sec. 12, MTWThF VII, 6VH

Econ.6su.¶ 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. (5 cred.; soph., jr., sr.; no prereq.; lect. MTWThF I; NMAud.) Mr. Brozen and others.

Sec. 1, MTWThF II, 210VH  
 Sec. 2, MTWThF II, 115VH  
 Sec. 3, MTWThF III, 113VH  
 Sec. 4, MTWThF III, 112VH  
 Sec. 5, MTWThF III, 115VH  
 Sec. 6, MTWThF IV, 115VH  
 Sec. 7, MTWThF IV, 112VH  
 Sec. 8, MTWThF IV, 113VH  
 Sec. 9, MTWThF V, 2VH  
 Sec. 10, MTWThF V, 112VH

Sec. 11, MTWThF V, 113VH  
 Sec. 12, MTWThF VI, 115VH  
 Sec. 13, MTWThF VI, 112VH  
 Sec. 14, MTWThF VI, 113VH  
 Sec. 15, MTWThF VII, 115VH  
 Sec. 16, MTWThF VII, 112VH  
 Sec. 17, MTWThF VII, 113VH  
 Sec. 18, MTWThF VIII, 112VH  
 Sec. 19, MTWThF VIII, 113VH  
 Sec. 20, MTWThF VIII, 115VH

Econ.25su. Principles of Accounting. The corporate balance sheet and income statement, capital stock, stock subscriptions, premium and discount on stock, surplus, reserves, dividends, bond valuation, and amortization. (3 cred.; soph., jr., sr.; prereq. Econ. 20; Sec. 1, MTWThF I, 113VH; Sec. 2, MTWThF V, 207VH; Sec. 3, MTWThF VII, 221VH.) Mr. Heilman and others.

Econ.32su.‡ Beginning Typewriting. Personal use factors; keyboard technique for touch typing; letter arrangement; speed development. (1 cred.; fr., soph., jr., sr.; no prereq.; MTWThF II, MWF VII; 209VH.) Miss Peterson.

Econ.39su.‡‡ Intermediate Shorthand. Refresher course; review of 5,000 most-used Gregg shorthand forms; mailable letters transcribed from dictation. (3 cred.; soph., jr., sr.; prereq. Econ. 38, one year of high school shorthand, 60 words per minute on Gregg five-minute test material, or consent of instructor; MTWThF I, MWF VI; 209VH.) Mrs. Bentson.

Econ.50su. 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. Econ. 6-7 or 83; MTWThF V; 1VH.) Mr. Graves.

B.A.51su.†† Business Law: Contracts. A discussion of the law of contracts. (3 cred.; jr., sr.; prereq. Econ. 6-7; Sec. 1, MTWThF I, 1VH; Sec. 2, MTWThF II, 4VH.) Mr. Neville.

B.A.54su.§ Elementary Accounting: Combined Course. The financial statements; analysis of transactions; recording; special books and journals; adjusting and closing entries; worksheets; capital stock; surplus and reserves; funds. (4 cred.; jr., sr.; no prereq.) Mr. Heilman and others.

Sec. 1, MTWThF I, M VII-IX, 306VH  
 Sec. 2, MTWThF I, M VI-VIII, 307VH  
 Sec. 3, MTWThF II, M VII-IX, 301VH  
 Sec. 4, MTWThF II, T VII-IX, 306VH  
 Sec. 5, MTWThF II, T VI-VIII, 307VH  
 Sec. 6, MTWThF III, T VII-IX, 301VH  
 Sec. 7, MTWThF III, W VII-IX, 306VH  
 Sec. 8, MTWThF III, W VI-VIII, 307VH

† 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.

§ B.A. 54-55 is a combination of Econ. 20 and 25-26.

¶ To receive credit for this course a student must complete Econ. 7.

‡ A fee of \$2.50 a quarter is charged students registering for either or both Econ. 32 and 39.

†† To receive credit a student must complete B.A. 51 and either 52 or 53.



- Sec. 9, MTWThF IV, W VII-IX, 301VH  
 Sec. 10, MTWThF IV, Th VII-IX, 306VH  
 Sec. 11, MTWThF IV, Th VI-VIII, 307VH  
 Sec. 12, MTWThF V, F VII-IX, 307VH  
 Sec. 13, MTWThF V, F VII-IX, 306VH  
 Sec. 14, MTWThF VI, 306VH, F VII-IX, 301VH

- B.A.58su. Elements of Public Finance. Public expenditures, revenues, debts, fiscal policy and financial administration. Special attention is given to tax principles, practices, burdens, and co-ordination of national, state, and local finance. This is a condensed course given especially for School of Business Administration students. (3 cred.; jr., sr.; prereq. Econ. 6-7; MTWThF III; 207VH.) Mr. Borak.
- B.A.69su. Retail Store Management. Organization; location, layout, and equipment; buying and sales budgets and sales planning; sales promotion; interior and window display; stock and expense control; finance and general policy; credits and collections; personnel; store operation and services. Case studies, problems, and discussions. (3 cred.; jr., sr.; prereq. B.A. 77; MTWThF VII, 207VH.) Miss Canoyer.
- B.A.86su. Office Management. The office as a producing unit; office organization, equipment, and layout; development of office standards and routines; relation of the office to operating divisions; scientific management of office work. (3 cred.; jr., sr.; prereq. Econ. 6-7; MTWThF III; 209VH.) Mrs. Bentson.
- B.A.89su. Production Management. Location and layout of industrial plants; types of operating organization; shop personnel; standards of operation; purchasing and inventory control; routing, scheduling, and dispatching of product; scientific management; practical problems in production control. (3 cred.; jr., sr.; prereq. Econ. 6-7 or equiv.; Sec. 1, MTWThF IV, 4VH; Sec. 2, MTWThF VI, 1VH.) Mr. Immer.
- B.A.91su. Tabulating Equipment Laboratory. The basic functions of tabulating equipment; illustrations of its use in special accounting, statistical, and production analysis; and its use for general accounting and statistical control of business operations. (1 cred.; jr., sr.; prereq. Econ. 26 and either Econ. 5 or B.A. 70; Sec. 1, MW VIII-IX, 6VH; Sec. 2, TTh VIII-IX, 6VH.) Mrs. Boehmler.
- B.A.93su. Accounting Laboratory. A long practice problem will be worked under supervision. Required of majors in accounting and in commercial education. (1 cred.; jr., sr.; prereq. Econ. 26; Sec. 1, MW V-VI, 301VH; Sec. 2, TTh V-VI, 301VH.) Mrs. Boehmler.
- B.A.101su. Advanced General Economics. (For the Summer Session this course is the equiv. of Econ. 103.) A detailed analysis of price determination under competitive and monopolistic conditions, with special emphasis on rigorous training in the techniques of modern economic analysis. The major topics are laws of return, demand curves, cost curves, and short and long run prices under various types of competition. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83.) Mr. Boddy and others.
- |                          |                         |
|--------------------------|-------------------------|
| Sec. 1, MTWThF I, 207VH  | Sec. 3, MTWThF V, 4VH   |
| Sec. 2, MTWThF II, 105VH | Sec. 4, MTWThF VII, 1VH |
- B.A.118su. Auditing Procedure. A laboratory course in auditing procedure. Class instruction in auditing technique and the preparation of a complete set of working papers and an audit report. (3 cred.; jr., sr., grad.; prereq. B.A. 139 or 151; Sec. 1, MTWThF IV, 207VH; Sec. 2, MTWThF VII, 2VH.) Mr. Lund.
- B.A.130su.‡ Cost Accounting Survey. A general survey of cost accounting from the point of view of the executive who must use cost information in the conduct of his business. (3 cred.; jr., sr., grad.; prereq. Econ. 25-26; MTWThF III; 105VH.) Mr. Reighard.

‡ A fee of \$1 is charged for this course.

- B.A.146su. Investments. A general survey of the external and internal factors influencing the prices of securities and of the principles of an investment policy for the needs of the average conservative investor. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83 and Econ. 155; MTWThF IV; 221VH.) Mr. Stehman.
- B.A.150su.‡ Intermediate Accounting. A course in the practice and technique of accounting for students who intend to specialize in accounting. (3 cred.; jr., sr., grad.; prereq. Econ. 26 or B.A. 55; MTWThF II; 2VH.) Mr. Heilman.
- B.A.152su. Cost Accounting. The basic principles of cost accounting with special reference to the Job Order cost system. (3 cred.; jr., sr., grad.; prereq. Econ. 26 or B.A. 55; MTWThF V; 105VH.) Mr. Reighard.
- Econ.155su. Corporation Finance: Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporation. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; Sec. 1, MTWThF II, 207VH, Mr. Stehman; Sec. 2, MTWThF VI, 207VH, Mr. Borak.)
- Econ.161su. Labor Problems and Trade Unionism. A discussion of employment, hours, wages, types of unionism, policies, and practices of labor organization. Special emphasis upon economic implications of modern working conditions. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; Sec. 1, MTWThF III, 4VH; Sec. 2, MTWThF VI, 105VH.) Mr. Childs.
- Econ.162su. Labor and Socialist Movements. Analysis of structure and operation of American labor unions. An interpretation of leading labor movements in Europe and the United States during the last century. (3 cred.; jr., sr., grad.; prereq. Econ. 161; MTWThF VII; 105VH.) Mr. Kuhlmann.
- B.A.167su. Introduction to Industrial Relations. Evaluation of managerial policies and devices designed to secure the cooperation and efficient participation of employees in business, industry, and government. Attention is directed especially to the determination of labor needs, job analysis and classification, methods of recruiting workers, selective devices, training and safety programs, service rating, employment stabilization, collective bargaining, and compensation. (3 cred.; jr., sr., grad.; prereq. Econ. 161; MTWThF II; 1 VH.) Mr. Yoder.
- Econ.172su. Economics of Transportation. (For the Summer Session this course is the equiv. of B.A. 71.) 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, co-ordinator of services. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; Sec. 1, MTWThF III, 1 VH; Sec. 2, MTWThF VI, 4VH.) Mr. Nightingale.
- Econ.176su. International Commercial Policies. Theory of international commerce; protective tariffs, free trade, reciprocity, subsidies, preferential treatment, the open door, international finance, commercial treaties, foreign politics, and other governmental and organized efforts to affect trade. American problems emphasized. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWThF II; 6VH.) Mr. Blakey.
- B.A.180Dsu.\* Senior Topics: Industrial Relations. A discussion of personnel problems exemplified in cases; individual investigations of various phases of personnel administration. (3 cred.; sr., grad.; prereq. B.A. 167; MTWThF I; 105VH.) Mr. Yoder.
- B.A.180Esu. Senior Topics in Office Management. Procedures and control of correspondence; critical analysis of current correspondence, standards and costs; problems requiring persuasive writing. (3 cred.; jr., sr.; prereq. consent of instructor; MTWThF IV; 209VH.) Miss Peterson.

‡ A fee of \$1 is charged for this course.

B.A.181Asu. Senior Topics: Accounting. Financial reporting standards under S.E.C.; financial analyses. (3 cred.; sr., grad.; prereq. B.A. 151 or 139; MTWThF I; 301VH.) Mr. Heilman.

Econ.185su. Economics of Marketing. (For the Summer Session this course may be substituted for B.A. 77.) 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.; jr., sr., grad.; prereq. Econ. 6-7 or 83; Sec. 1, MTWThF IV, 1 VH, Miss Canoyer; Sec. 2, MTWThF VII, 4VH, ar.)

Econ.189su.¶ Principles of Taxation. Development of taxation; property, income, commodity, sales, inheritance, and other taxes; shifting incidence and other effects; federal, state, and local relations; special problems. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWThF I, 4VH.) Mr. Blakey.

#### SECOND TERM

Econ.3su. 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. (3 cred.; 2nd and 3rd qtr. fr., soph., jr., sr.; no prereq.) Mr. Graves and others.

Sec. 1, MTWThF I, 205VH

Sec. 2, MTWThF II, 205VH

Sec. 3, MTWThF II, 221VH

Sec. 4, MTWThF III, 205VH

Sec. 5, MTWThF III, 221VH

Sec. 6, MTWThF IV, 205VH

Sec. 7, MTWThF IV, 221VH

Sec. 8, MTWThF VI, 205VH

Sec. 9, MTWThF VII, 205VH

Sec. 10, MTWThF VII, 221VH

Econ.5su.§ Elements of Statistics. Elementary concepts in statistical methods; averages, ratios, errors, sampling, index numbers, graphic representation, collection of material. (3 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq.) Mr. Belcher and others.

Sec. 1, MTWThF I, 2VH

Sec. 2, MTWThF II, 6VH

Sec. 3, MTWThF III, 2VH

Sec. 4, MTWThF IV, 2VH

Sec. 5, MTWThF VI, 2VH

Sec. 6, MTWThF VII, 2VH

Econ.7su. Principles of Economics. A continuation of Econ. 6su. (5 cred.; soph., jr., sr.; prereq. Econ. 6; lect. MTWThF I, NMAud.) Mr. Brozen and others.

Sec. 1, MTWThF II, 112VH

Sec. 2, MTWThF II, 113VH

Sec. 3, MTWThF II, 115VH

Sec. 4, MTWThF III, 112VH

Sec. 5, MTWThF III, 113VH

Sec. 6, MTWThF III, 115VH

Sec. 7, MTWThF IV, 115VH

Sec. 8, MTWThF IV, 112VH

Sec. 9, MTWThF IV, 113VH

Sec. 10, MTWThF V, 115VH

Sec. 11, MTWThF V, 112VH

Sec. 12, MTWThF V, 113VH

Sec. 13, MTWThF VI, 112VH

Sec. 14, MTWThF VI, 113VH

Sec. 15, MTWThF VI, 115VH

Sec. 16, MTWThF VII, 112VH

Sec. 17, MTWThF VII, 113VH

Sec. 18, MTWThF VII, 115VH

Sec. 19, MTWThF VIII, 112VH

Sec. 20, MTWThF VIII, 113VH

Econ.26su. Principles of Accounting. Problems of income determination such as cost of sales, different methods of sales, inventory problems, manufacturing costs, depreciation, intangibles, nonoperating incomes and expenses, bond interest, capital gains and losses. Review of the financial statements and classifications, introduction to the problem of statement analysis. (3 cred.; soph., jr., sr.; prereq. Econ. 25; Sec. 1, MTWThF I, 6VH; Sec. 2, MTWThF III, 6VH; Sec. 3, MTWThF VI, 105VH.) Mr. Heilman and others.

§ Not open to students who have received credit in Soc. 45 or B.A. 70.

¶ A student may not receive credit for both Econ. 189 and either B.A. 58 or Econ. 191-192.

- B.A.52su. Business Law: Agency, Partnership, and Corporations. The law of agency and a consideration of problems of partnerships and corporations. (3 cred.; jr., sr.; prereq. B.A. 51; Sec. 1, MTWThF I, 1 VH; Sec. 2, MTWThF II, 4VH.) Mr. Neville.
- B.A.55su.† Elementary Accounting: Combined Course. Bonds and amortization, sinking funds, determination of income, depreciation, intangibles, inventories. (4 cred.; jr., sr.; prereq. B.A. 54.) Mr. Heilman and others.
- Sec. 1, MTWThF I, 306VH, M VII-IX, 306VH
  - Sec. 2, MTWThF I, 307VH, M VI-VIII, 307VH
  - Sec. 3, MTWThF II, 301VH, M VII-IX, 6VH
  - Sec. 4, MTWThF II, 306VH, T VII-IX, 306VH
  - Sec. 5, MTWThF II, 307VH, T VI-VIII, 307VH
  - Sec. 6, MTWThF III, 301VH, T VII-IX, 6VH
  - Sec. 7, MTWThF III, 306VH, W VII-IX, 306VH
  - Sec. 8, MTWThF III, 307VH, W VI-VIII, 307VH
  - Sec. 9, MTWThF IV, 301VH, W VII-IX, 6VH
  - Sec. 10, MTWThF IV, 306VH, Th VII-IX, 306VH
  - Sec. 11, MTWThF IV, 307VH, Th VI-VIII, 307VH
  - Sec. 12, MTWThF V, 301VH, F VII-IX, 301VH
  - Sec. 13, MTWThF V, 307VH, F VII-IX, 307VH
  - Sec. 14, MTWThF VI, 306VH, F VII-IX, 306VH
- B.A.88su. Advertising. The course covers two important phases of advertising: (1) the place of advertising in business, (2) advertising procedures. Attention is given to planning an advertising campaign; including market research, appropriation, choice of media, scheduling, preparation of copy, and layout. (3 cred.; jr., sr.; prereq. B.A. 77 and Psy. 56; MTWThF VI; 207VH.) Mr. Hardy.
- B.A.89su. Production Management. Location and layout of industrial plants; types of operating organization; shop personnel; standards of operation; purchasing and inventory control; routing, scheduling, and dispatching of product; scientific management; practical problems in production control. (3 cred.; jr., sr.; no prereq.; MTWThF VII, 1 VH.) Mr. Immer.
- B.A.91su. Tabulating Equipment Laboratory. The basic functions of tabulating equipment; illustrations of its use in special accounting, statistical, and production analysis; and its use for general accounting and statistical control of business operations. (1 cred.; jr., sr.; prereq. Econ. 26 and either Econ. 5 or B.A. 70; Sec. 1, MW V-VI, 6VH; Sec. 2, TTh V-VI, 6VH.) Mrs. Boehmler.
- B.A.93su. Accounting Laboratory. A long practice problem will be worked under supervision. Required of majors in accounting and in commercial education. (1 cred.; jr., sr.; prereq. Econ. 26; Sec. 1, MW VIII-IX, 301VH; Sec. 2, TTh VIII-IX, 301VH.) Mrs. Boehmler.
- B.A.94su. Cost Accounting Laboratory. The design and operation of a special order, and a multiple process cost accounting system. (1 cred.; jr., sr.; prereq. B.A. 152 or concurrent; Sec. 1, MW VI-VII, 301VH; Sec. 2, TTh VI-VII, 301VH.) Ar.
- B.A.102su. Advanced General Economics. (A continuation of B.A. 101su.) (For the Summer Session this course is the equiv. of Econ. 104) Theory of the distribution of wealth and income. General distribution theory, wages, rent, and interest. (3 cred.; jr., sr., grad.; prereq. B.A. 101 or Econ. 103.) Ar.
- Sec. 1, MTWThF I, 207VH
  - Sec. 2, MTWThF III, 4VH
  - Sec. 3, MTWThF V, 1 VH
  - Sec. 4, MTWThF VII, 4VH

† B.A. 54-55 is a combination of Econ. 20 and 25-26.

- B.A.112su.‡ Business Statistics. Survey and criticism of methods used in analyzing time series, with special applications to the study of cyclical fluctuations of economic phenomena. (3 cred.; jr., sr., grad.; prereq. Econ. 5 or B.A. 70; Sec. 1, MTWThF II, 207VH; Sec. 2, MTWThF III, 207VH.) Mr. Mudgett.
- B.A.133su. Standard Costs. The methods of standard costs. The meaning of standards. The setting of standards for materials, labor, and overhead. The analysis of and accounting for variations. The development and application of standards to distribution as well as to production activities. (3 cred.; jr., sr., grad.; prereq. B.A. 130 or 152-153; MTWThF I; 4VH.) Mr. Ostlund.
- B.A.134su. Income Tax Accounting. The principles involved in determining taxable net income and the computation of federal and state income taxes for corporations, individuals, and trusts. (3 cred.; jr., sr., grad.; prereq. B.A. 139 or 150-151; MTWThF V; 105VH.) Mr. Reighard.
- B.A.136su. Internal Auditing and Accounting Control. Accounting systems and methods as related to internal check and audit control of routine transactions and the establishment of administrative and budgetary control. (3 cred.; jr., sr., grad.; prereq. B.A. 139 or 150-151; MTWThF II; 2VH.) Mr. Reighard.
- Econ.140su. 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. Econ. 6-7 or 83; MTWThF I; 105VH.) Miss Canoyer.
- Econ.142su. Advanced Money and Banking. The problems of a central bank and the theory of the value of money. Includes control of reserves, providing a scientific currency, regulation of credit; fluctuations of the general price level—their causes and possible reduction. (3 cred.; jr., sr., grad.; prereq. Econ. 3 and either 6-7 or 83; Sec. 1, MTWThF II, 1 VH, Mr. Myers; Sec. 2, MTWThF VI, 1 VH; Mr. Borak.)
- Econ.149su.\* Business Cycles. Analysis of factors involved in business fluctuations. Comparison of theories of the cause of prosperity and depression. Introduction to the statistical data and methods of business forecasting. (3 cred.; sr., grad.; prereq. Econ. 142 or consent of instructor; MTWThF IV; 4VH.) Mr. Myers.
- B.A.151su.‡ Intermediate Accounting. A continuation of B.A. 150su. (3 cred.; jr., sr., grad.; prereq. B.A. 150; MTWThF IV; 105VH.) Mr. Lund.
- B.A.153su. Cost Accounting. Process costs; joint and by-products; estimating cost systems; standard costs; costs applied to distribution; managerial use of costs. (3 cred.; jr., sr., grad.; prereq. B.A. 152 or B.A. 130; MTWThF III; 105VH.) Mr. Ostlund.
- Econ.155su. Corporation Finance: Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporation. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations. (3 cred.; jr., sr., grad.; prereq. Econ. 3 and Econ. 6-7 or 83; MTWThF IV; 1 VH.) Mr. Stehman.
- Econ.178su. Economics of Consumption. A descriptive and analytical survey of the price-making process; the origins and the personal distribution of money income and purchasing power; planes of living in the United States; "ideal" standards of living; possibilities for improvement in the plane of consumption. Not open to majors in economics or business administration. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWThF II; 105VH.) Miss Canoyer.

‡ A fee of \$1 is charged for this course.

B.A.180Gsu.§ Senior Topics: Production Management. Plant Layout. Study of principles of plant and office layout. Brief survey of methods and techniques employed. Problems taken from local companies. (3 cred.; sr., grad.; prereq. B.A. 89 or equiv.; MTWThF IV; 207VH.) Mr. Immer.

Econ.189su.† Principles of Taxation. (For Summer Session this course may be substituted for B.A. 58.) Development of taxation; property, income, commodity, sales, inheritance, and other taxes; shifting incidence and other effects; federal, state, and local relations; special problems. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWThF III; 1 VH.) Mr. Borak.

† A student may not receive credit for both Econ. 189 and Econ. 191-192.

§ Credit may not be received for both B.A. 180G and B.A. 184.

## INSTITUTE OF CHILD WELFARE

The Institute of Child Welfare was organized for three purposes: research in child development; training future workers with children; and bringing information on the care and training of children to parents. The Institute offers graduate and undergraduate courses and conducts a nursery school and kindergarten for demonstration and research purposes. In the summer school it conducts two workshops.

### NURSERY SCHOOL AND KINDERGARTEN

The Nursery School and Kindergarten will be in session from 9:00 a.m. to 1:00 p.m. beginning June 18 and closing July 25. Applications for the enrolment of children will be received at the office of the Institute. The fee will be \$20 for tuition, which includes orange juice and lunch at noon. A few additional children can be accommodated from 9:00 to 11:45 a.m., with no lunch served but including orange juice, at a tuition fee of \$15.

Responsibility for transportation to and from schools must be taken by the parents.

### WORKSHOPS

During the first term, the Institute in cooperation with the College of Education, offers two Workshops in Childhood Education and Child Development, one at the undergraduate and one at the graduate level, which will be of special interest to teachers in the primary grades, kindergarten, and the nursery school. They are of value to those wishing to renew certificates or to prepare for work with children. Credits obtained may be used toward an elementary education major. Students may register for these workshops under either Ed.T. 78su., or C.W. 86su., or Ed.C.I. 131su. or C.W. 186su. for 9 quarter credits. Registration is limited. Anyone interested should write to John E. Anderson, Director, Institute of Child Welfare, 101 Pattee Hall, University of Minnesota, Minneapolis 14, Minnesota.

#### FIRST TERM

- 40su. Child Training. (3 cred.; soph., jr., sr.; prereq. Psy 1-2; MTWF IV and 1 hr. ar.; 202Pt.) Mrs. Cummings.
- 86su.‡ Workshop in Childhood Education. (Same as Ed.T. 78su.) A full program for six weeks. Students attend the lectures in Ed.T. 55su., Principles of Early Childhood Education. For the remaining credit, students are divided into individualized study and special interest groups, but also work as a whole. Experience in the use of play and plastic materials, story telling and rhythms, and other educational group activities for young children will be given. Conferences, supervised group work, and independent study. Observations in the Nursery School, Kindergarten, and the Elementary Demonstration School. Credit allowed toward nursery-kindergarten-primary or elementary education major and substitution, upon petition is permitted for certain required courses in the outlined curriculum. (9 cred.; jr., sr.; hrs. ar.; 5 Pt.) Mrs. Fuller, Miss Headley, Miss Peterson.
- 130su. Motor, Linguistic, and Intellectual Development of the Child. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.; MTWThF I; 202Pt.) Miss Blodgett.
- 141su. Behavior Problems in Older Children. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; MTWThF III; 202Pt.) Miss Blodgett.
- 150su.‡ Problems of Childhood Education. (Same as Ed.C.I. 130.) (3 cred.; sr., grad.; prereq. 12 cred. in ed.; MTWF IV and 1 hr. ar.; 5Pt.) Mrs. Fuller.

‡ A fee of \$1 per credit is charged for this course.

- 170su. Parent Education. (3 cred.; sr., grad.; prereq. 15 cred. in psy., ed., home econ., or soc.; MTWThF II; 202Pt.) Mrs. Cummings.
- 186su.‡ Laboratory in Childhood Education and Child Development. (Same as Ed.C.I. 131.) Workshop. A full program for six weeks. Each student will be required to attend C.W. 150 (Ed.C.I. 130) Problems of Childhood Education and lectures in other approved courses. For the remainder of their work the students will be in a workshop divided into special interest groups, but also working as a whole. Independent study, conferences, observations, group work, etc., under the supervision of Mrs. Fuller, Miss Headley, and Miss Peterson. Observation in the Nursery School, Kindergarten, child care centers, and the Demonstration School. (9 cred.; sr., grad.; prereq. permission of the director of the Institute of Child Welfare to whom advance application should be made; hrs. ar.; 5Pt.) Mrs. Fuller, Miss Headley, Miss Peterson.
- 270su.\* Readings in Child Development. (Cred. ar.; grad. students only; hrs. ar.) Staff.

The following courses, Ed.T. 55su., Principles of Early Childhood Education; Ed.T. 56su., Methods and Observation in the Nursery School and Kindergarten; Ed.T. 57su., Nursery School-Kindergarten Laboratory in Art, Literature, and Social Studies; Ed.T. 58su., Nursery School-Kindergarten Laboratory in Permanent Play Materials, Music and Science; Ed.T. 77A or Csu., Directed Teaching, and Ed.T. 78su., Workshop in Childhood Education, listed under Methods and Directed Teaching on page 115; and Ed.C.I. 130su., Problems in Childhood Education, and Ed.C.I. 131su., Laboratory in Childhood Education and Child Development, listed on page 107, are also offered by the College of Education.

#### SECOND TERM

- 80su. Child Psychology. (3 cred.; jr., sr.; prereq. Psy. 1-2; MTWThF II; 202Pt.) Ar.
- 131su. Personality, Emotional, and Social Development of the Child. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.; MTWThF III; 202Pt.) Miss Templin.
- 140su. Behavior Problems in Younger Children. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; MTWThF I; 202Pt.) Miss Templin.
- 270su.\* Readings in Child Development. (Cred. ar.; grad. students only; hrs. ar.) Miss Templin.

‡ A fee of \$1 per credit is charged for this course.



## LIBRARY INSTRUCTION

In the Summer Session, the Division of Library Instruction offers a series of integrated eight-week terms, which allow a student to complete the full library course in four summers. During these eight weeks, basic courses will be offered jointly for beginners and advanced courses for students who have already partially completed the program.

NOTE—Course numbering follows that of the revised curriculum; see the Division of Library Instruction Announcement for the years 1945-47.

Fees for the eight-week term include: tuition \$34.40, incidental fee \$8, deposit \$2, total \$44.40.

In order to provide for completion of courses in the proper sequence in subsequent Summer Sessions, students enrolling in the division for the first time who plan to complete a major should enroll for the following courses:

Lib.Sci. 52su .....	2 credits	Lib.Sci. 81su .....	2 credits
Lib.Sci. 70su .....	3 credits	Lib.Sci. 82su .....	4 credits

### FIRST TERM (8 Weeks) June 17–August 8

- Lib.Sci.52su. History of Publishing. Publishers and publishing from the sixteenth century to the present. (2 cred.; no prereq.; MW IV and 1 hr. ar.; 5Lib.) Mr. Strout.
- Lib.Sci.57su. School Library Problems. Organization and administration of libraries in large units. Relationships of school libraries and public libraries. School library records. Budgeting. Professional training of school librarians. (3 cred.; prereq. Lib.Sci. 53; MWF II and 1 hr. ar.; 3Lib.) Mrs. Walraven.
- Lib.Sci.61su. Library Practice. Practice under supervision, in Minneapolis and St. Paul libraries. The time and character of the practice will be individually arranged to suit student aptitudes and needs. (4½ cred. for College of Education students to meet requirements of the Minnesota State Education Department for school librarians; for others, 3 cred.; prereq. 15 cred. in Lib.Sci. or satisfactory library experience.) Mr. Strout and others.
- Lib.Sci.63su. Reference II. Reference work in subject fields; the reference department; practical bibliography. (3 cred.; prereq. Lib.Sci. 62; MWF III and 1 hr. ar.; 5Lib.) Mr. Strout.
- Lib.Sci.66su. The Literature and Bibliography of Education. General bibliographies covering U. S. and foreign publications. Special subject bibliographies. Sources of information in special fields of education. (3 cred.; no prereq.; MWF III and 1 hr. ar.; 3Lib.) Mrs. Walraven.
- Lib.Sci.70su. 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.; MWF II and 1 hr. ar.; 5Lib.) Mr. Strout.
- Lib.Sci.71su. Reading Guidance for Children. The reading interests of children; book selection and reading guidance; the children's room, its organization and administration. (3 cred.; prereq. Lib.Sci. 70; MWF I and 1 hr. ar.; 3Lib.) Ar.
- Lib.Sci.74su. Library Materials in the School's Instructional Program. How to locate library materials. Sources of information about books and other teaching materials. Methods of cooperation between teachers and librarians. (2 cred.; no prereq.; TTh I and 1 hr. ar.; 3Lib.) Mrs. Walraven.

- Lib.Sci.81su. Theory of Bibliography. Introduction to the description and arrangement of books in catalogs, bibliographies, and on library shelves. (2 cred.; no prereq.; TTh IV and 1 hr. ar.; 5Lib.) Ar.
- Lib.Sci.82su. Cataloging and Classification. Methods of dictionary card cataloging and shelf classification, especially for small libraries; Sears' *Subject Headings* and Dewey's *Decimal Classification*. (4 cred.; no prereq.; MTWThF VII; 5Lib.) Ar.
- Lib.Sci.85su. Special Problems. Individual study on library problems for advanced students in Library Science. (1-3 cred.; prereq. approval of director, Division of Library Instruction; ar.) Mr. McDiarmid and others.

# THE GENERAL COLLEGE

## GENERAL INFORMATION

The General College was established by the University of Minnesota in 1932 in response to a clearly demonstrated need. A study of enrolment figures had indicated that too many students were dropping out of college before they completed more than one or two years. Too many were receiving only a fragmentary and unrelated college education, since they took only the introductory courses, which were organized primarily as a foundation for later more specialized work. Too many were being dropped for low scholarship who could profit socially and individually from a college program geared more directly to their needs and interests. The newly-established program was clearly a successful step forward in conserving human resources.

One of the primary aims of the General College was and is to offer a program of studies better suited to the students who were coming to college, rather than attempting to make the students fit into the traditional college curriculum. The courses are broad in scope, stressing understanding of basic principles and relationships to other fields of knowledge. Some of the courses and areas deal with common human activities (called orientation areas) in addition to others which are organized around the more traditional subject matter content.

Four major groupings have been made into these orientation areas. They are organized around those problems which confront a person who is adjusting and preparing himself (1) to his status as a worker, (2) to his duties and responsibilities as a citizen, (3) to his relationships within a family group, and (4) to a clarification and application of the basic values and interests which are essential to him as an individual. This kind of education, which prepares people for their common activities in our present-day complex society, is usually referred to as *general education*. General education aims to provide for the development of the common understandings, abilities, insights, and appreciations for the personal and social activities basic to normal human living and participation in a democratic society.

The degree of associate in arts is conferred by the University upon students who successfully complete a two-year program in the General College.

Admission to the General College requires graduation from an accredited high school or satisfactory performance on University entrance tests, but no specific pattern of high school subjects is required. Students who do not qualify for admission to other colleges of the University because of inadequate preparation or poor high school record may remedy these deficiencies or demonstrate their ability to handle work of college caliber through a careful selection of courses in the General College. Students who successfully demonstrate this ability may make application to transfer to another college of the University without undue loss of time or credit.

The regular General College Bulletin, which may be received upon request from the Office of Admissions and Records of the University, indicates in detail the requirements for the Associate in Arts degree, for the comprehensive areas, general regulations, and additional general information. Courses successfully completed in the summer session may be applied toward fulfilling the requirements of comprehensive areas and examinations.

### FIRST TERM

1su. Individual Orientation. A study of the purposes of general education; aids in adjustment of the new student to college, with a major emphasis upon development of students' insight into their personal problems. (3 cred.; open to 1st qtr. fr. and others by permission of instructor; MTWThF V; 101NH.) Mr. Kloster.

- 5su. Problems of Contemporary Society. Emphasis on analysis of world problems resulting from the Industrial Revolution; the understanding of the causes of war, unemployment, and overproduction. Contemporary America and the obligations and responsibility of individuals in contributing to the solution of world problems. (3 cred.; all; no prereq.; MTWThF I; 101WeH.) Mr. McCune.
- 8Asu. Vocational Orientation. The work of this course centers around the problem of making a satisfactory vocational choice. The factors which are important in making vocational and educational plans; dependable methods of arriving at a sound vocational choice and the pitfalls to be avoided are described. Emphasis is placed on the development of skills and attitudes in vocational planning which will carry over to the vocational readjustments which may arise in adult vocational life. (3 cred.; all; no prereq.; MTWThF II; 202WeH.) Mr. Borow.
- 8Bsu. Vocational Orientation Laboratory. A laboratory course in which students work on projects designed to meet their individual educational and vocational problems. Students study the factors important in their own later vocational adjustment which lead to job satisfaction and employee morale. A particular vocational field appropriate to the interests and abilities of the individual is thoroughly studied. Other projects are designed to assist the student in examining his own vocational potentialities, locating and using occupational information, and seeking and obtaining employment. (3 cred.; all; prereq. 8A or permission of instructor; MTWThF IV; 202WeH.) Mr. Borow.
- 10ABsu.‡ Human Biology. The general principles of biology and the fundamental similarities in the living world are stressed with the greatest emphasis upon man, his development, heredity, and physiology. (6 cred.; all; no prereq.; MTWThF I-II and additional hrs. ar.; 201WeH.) Mr. Cieslak.
- 10Xsu. Nature Study. The biology and geology of the local region are emphasized through field and museum trips, and lectures. The student observes animal and plant life of streams, fields, and woods. He learns of the relationship between organisms and their environment. Fossils, insects, and plants are collected and identified. (3 cred.; all; no prereq.; MWF VII-VIII and additional hrs. ar.; 307MNH.) Mr. J. M. Harris.
- 12Csu. General Anthropology. The study of man in relation to his physical characteristics, his origin and geographical distribution, and the classification and relationship of races. Man as a social and cultural being, and a comparison of languages, culture patterns, and the historical processes by which they have been developed and modified. (3 cred.; all; no prereq.; MTWThF V; 206WeH.) Ar.
- 22Asu.‡‡ Art Today. Promotes an understanding of the materials and methods used by modern artists in many fields—architecture, industrial art, commercial design, painting, sculpture, and the graphic processes. The course work consists of illustrated lectures, discussions, laboratory work, and field trips. (3 cred.; all; no prereq.; MTWThF IV; 206WeH.) Mr. Hulse.
- 23Asu.‡‡ Art Laboratory. Work in the Art Laboratory gives students actual experience in art production. Problems of the laboratory are individual and may be selected according to the student's own needs and interests. No special skills necessary. (3 cred.; all; no prereq.; MTWThF II-III; 301WeH.) Mr. Hulse.
- 24Asu.‡‡ Music Today. An inquiry into the drive that lies behind music and an attempt to establish a basic reason for the need of music. There is a close study of the elements out of which music is made: rhythm, melody, harmony, and tone color. There is an investigation of the problems of organization which takes the student across the entire field of musical activity. No special ability or previous knowledge is required. (2 cred.; all; no prereq.; MTWTh VI; 202WeH.) Miss Naes.

‡ A fee of \$1 is charged for this course.

‡‡ A fee of \$1.50 is charged for this course.

- 24Bsu.‡‡ Music Today. A continuation of 24Asu. (2 cred.; all; no prereq.; MTWTh VII; 202WeH.) Miss Naes.
- 30Asu. Literature Today. This course deals with modern essays, plays, short stories, and poems, with application to the individual reader's experience and interpretation of the problems of everyday life. (3 cred.; all; no prereq.; MTWThF VI; 111NH.) Mr. Appel.
- 30Dsu. Literature Today. Attention centers on American literature in the field of human relations. The text selections reflect man's struggle to preserve his right to life, liberty, and the pursuit of happiness. Lectures and class discussions concern the understanding and appreciation of minority groups. Literature is presented as a timely interpretation of individual weaknesses and achievements. (3 cred.; all; no prereq.; MTWThF VI; 206WeH.) Miss Sheldon.
- 31Asu. Writing Laboratory. The student's writing abilities are used as a basis for individual instruction in effective written expression. (3 cred.; all; no prereq.; Sec. 1, MTWTh I-II, 302WeH, Mr. Appel; Sec. 2, MTWTh III-IV, 302WeH, Miss Sheldon.)
- 32Asu.‡‡ Speech Laboratory. Readings and discussions on speech hygiene (analysis of causes and treatment of stage fright), study of language problems, and training in explanatory speaking. (3 cred.; all; no prereq.; MTWThF II; 306WeH.) Mrs. Graves.
- 32Bsu.‡‡ Speech Laboratory. Voice, diction, and interpretative reading. The speech mechanism and proper voice production methods are studied and individual voice problems are analyzed. The principles learned are applied to oral interpretation of the printed page in actual group situations. (3 cred.; all; no prereq.; MTWThF V; 306WeH.) Mr. Newgord.
- 33Asu.‡‡ Speech Studio. A basic course in microphone technique and radio broadcasting. Emphasis is on problems of reading aloud—both dramatic and non-dramatic material. (3 cred.; all; no prereq.; MTWThF III; 306WeH.) Mrs. Graves.
- 33Bsu.‡‡ Speech Studio. A continuation of 33A. Broadcasting laboratory and workshop. Emphasis is placed on creative student work in writing and production. (3 cred.; all; prereq. 33A or permission of instructor; MTWThF VI; 306WeH.) Mr. Newgord.
- 35Asu. Fundamentals of Mathematics. A review of certain useful parts of elementary mathematics, and such topics as our number system, fundamental operations with arithmetic and algebraic fractions, simple equations, factoring, and exponents. (3 cred.; all; prereq. one year of high school algebra; MTWThF V; 202NH; Th VII, 201WeH.) Mr. J. M. Harris.
- 40Bsu. Straight and Crooked Thinking. In contemporary life everyone is faced with practical problems that require straight thinking; he is also called upon to determine the value of a multitude of conflicting arguments. This course is concerned with an analysis of common errors and fallacies in thinking and the study of valid methods for drawing conclusions from evidence. (3 cred.; all; no prereq.; MTWThF III; 201WeH.) Mr. Ahlen.
- 42Asu. Human Development. Presents a general outline of human development by surveying physical growth, learning, and development of motor, linguistic, intellectual, and social skills, emotional life and adjustment. (3 cred.; all; no prereq.; MTWThF II; 101WeH.) Mr. Dale Harris.
- 42Bsu. Personal Adjustment. Deals with the individual's effective adjustment to social environment and pressures, the origin and nature of attitudes and complexes, and the psychology of social conflict. (3 cred.; all; no prereq.; MTWThF IV; 201WeH.) Mr. Dale Harris.

‡‡ A fee of \$1.50 is charged for this course.

- 43Asu. Background of the Modern World, Part I. The purpose is to offer students some idea about how the world in which they live came to be. The historical developments in the Western and Eastern hemispheres are discussed and analyzed as part of an interdependent world civilization. Man is presented to be just as important in his role of worker, worshiper, artist, and thinker, as in that of citizen. (3 cred.; all; no prereq.; MTWThF III; 101WeH.) Mr. McCune.
- 43Bsu. Historical Biography. Intended to make great movements of the past, knowledge of which is essential for thorough understanding of contemporary affairs, become vivid and real through the study of notable men and women whose lives illustrate and illuminate their times. Beginning with the Renaissance and the Reformation, and ending with the early years of the twentieth century. The lectures and readings will deal, among others, with Calvin, Catherine the Great, Newton, Cotton Mather, Franklin, Bismarck, Queen Victoria, the Curies, and Wilson. (3 cred.; all; no prereq.; MTWThF IV; 101WeH.) Mr. Moen.
- 44ABCsu. Retailing and Selling, Part I. Instruction and practical experience in the field of retailing and selling with salesmanship receiving the greatest emphasis. In addition to the required sales work in a local store for the two terms, there will be participation or observation of non-selling activities of a store. The course will include salesmanship, store services, non-selling problems, and trends in retailing. Group discussions, student demonstrations, and visual education devices will be used. (7½ cred. per term; soph. or by permission of instructor; no prereq.; MTWThF I-II-III; 206WeH.) Miss Determan.

## SECOND TERM

- 2su. Individual Applications of Social Psychology. This course deals with the role of society in the formation of personality, the psychology of relationships with others, the development of social skills, and the development of self-understanding. (3 cred.; all; prereq. 8 cred. in the field of psychology. This course is accepted as the core course for the Individual Orientation comprehensive examination. MTWThF V; 206WeH.) Mr. Kloster.
- 6su. Current History. The main objective is to encourage students to develop skill in interpreting the news—foreign, government, political, economic, and social—and its relationship to the current of history; news magazines and newspapers serve as points of departure; background materials are stressed to provide historical perspective. (3 cred.; all; no prereq.; MTWThF I; 101WeH.) Mr. McCune.
- 10Csu. Human Biology: Healthful Living. The preservation and improvement of health. Dieting, disease prevention, care of skin, pregnancy, mental health, medical costs, and public health are considered. (3 cred.; all; no prereq.; MTWThF V; 201WeH.) Mr. Cieslak.
- 10Xsu. Nature Study. See First Term for description. (3 cred.; all; no prereq.; MWF VII-VIII and additional hours arranged; 307MNH.) Mr. Cieslak.
- 23AXsu.‡‡ Art Laboratory (Commercial Art). An art laboratory for students who are interested in commercial art, and who have had no previous experience in that field. The student is given an introduction into problems of commercial art by work in design, drawing, and lettering. (3 cred.; all; no prereq.; MTWThF III-IV; 301WeH.) Mr. Hulse.
- 23Bsu.‡‡ Art Laboratory. See description of 23Asu. in First Term. (3 cred.; all; no prereq.; MTWThF I-II; 301WeH.) Mr. Hulse.
- 24Bsu.‡‡ Music Today. A continuation of 24Asu., although students may take 24Bsu. and 24Csu. without having had 24Asu. (2 cred.; all; no prereq.; MTWTh III; 202WeH.) Miss Naes.

‡‡ A fee of \$1.50 is charged for this course.

- 24Csu.‡‡ Music Today. See note following 24Bsu. above. (2 cred.; all; no prereq.; MTWTh IV; 202WeH.) Miss Naes.
- 30Asu. Literature Today. See First Term for description. (3 cred.; all; no prereq.; MTWThF II; 201WeH.) Miss Kivits.
- 31Asu. Writing Laboratory. See First Term for description. (3 cred.; all; no prereq.; MTWTh III-IV; 302WeH.) Miss Kivits.
- 31Bsu. Writing Laboratory. This course is planned to give the students experience in selecting and organizing reference material. The students listen to recorded lectures, read textbook excerpts, and reproduce the ideas in their own words. Each student undertakes a paper based on library reference reading. The actual writing is done under supervision. (3 cred.; all; prereq. 31A; Sec. 1, MWF I-II, 302WeH; Sec. 2, MWF V-VI, 302WeH.) Miss Sheldon.
- 32Csu.‡‡ Speech Laboratory. Emphasis is placed on methods of organizing materials for the effective oral communication of ideas. (3 cred.; all; no prereq.; MTWThF II; 306WeH.) Mr. Newgord.
- 33Asu.‡‡ Speech Studio. See First Term for description. (3 cred.; all; no prereq.; MTWThF IV; 306WeH.) Mr. Newgord.
- 35Asu. Fundamentals of Mathematics. See First Term for description. (3 cred.; all; prereq. one year of high school algebra; Sec. 1, MTWThF I, 202NH, Th VI, 201WeH; Sec. 2, MTWThF II, 202NH, Th VI, 201WeH.) Mr. J. M. Harris.
- 43Asu. Background of the Modern World, Part II. See First Term for description. (3 cred.; all; prereq. 43Asu. Part I; MTWThF III; 101WeH.) Mr. McCune.
- 43Bsu. Historical Biography. See First Term for description. (3 cred.; all; no prereq.; MTWThF II; 101WeH.) Mr. Moen.
- 44ABCsu. Retailing and Selling, Part II. See First Term for description. Retail store internship required. (7½ cred.; soph. or by permission of instructor; prereq. 44ABCsu. Part I; MTWThF I-II-III; 206WeH.) Miss Determan.

‡‡ A fee of \$1.50 is charged for this course.

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*The Bulletin of the*  
UNIVERSITY of MINNESOTA

Biological Station Summer Session at Lake Itasca  
Douglas Lodge, Minnesota

Second Term  
July 28 to August 29

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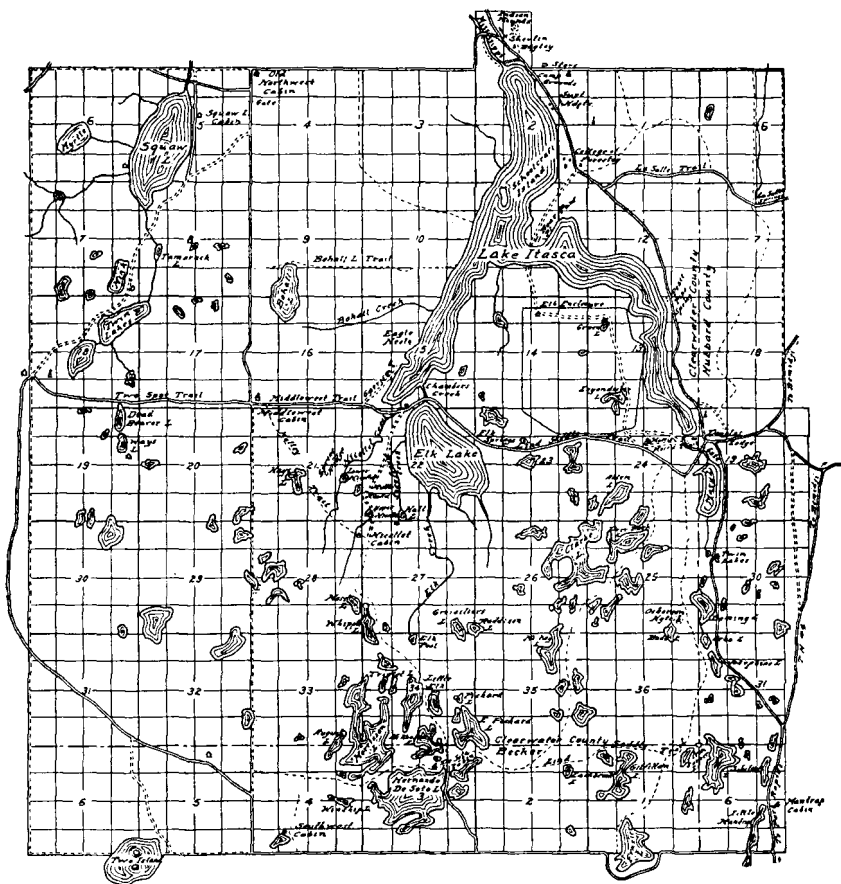


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Map of Itasca State Park

## GENERAL INFORMATION

The Lake Itasca Forestry and Biological Station was established in 1908 to provide a summer camp for the instruction of forestry students. In 1935 these facilities were made available to interested students and teachers of biological subjects during the second term of the University's Summer Session. Since then there has been an increasing interest in this activity. Because of the rich and varied flora and fauna of the region, the station provides a most suitable locality for the study of midwestern biological problems. Probably no other area in this region is better suited to the location of a field station of terrestrial and fresh-water biology.

### Location and Opportunities for Biological Work

Coniferous and hardwood forests merging into prairies, sand dunes, preglacial lake beds, glaciated and unglaciated areas, thousands of fresh-water lakes of all sizes and types, and swamps from the heavily forested types to open grass and muskeg, all combine to give Minnesota a highly diversified flora and fauna. Most of these features except the unglaciated areas are within easy driving distance of the station.

The Biological Station of the University of Minnesota is situated on the east shore of Lake Itasca in Itasca State Park. It is an area of great historical interest. The source of the Mississippi River is only a mile away. The normal points of entry to Itasca State Park by rail are Park Rapids and Bemidji some twenty-five miles away. During the Summer Session a Greyhound Bus Line from the Twin Cities reaches Douglas Lodge on the south end of Lake Itasca, four miles from the Biological Station.



Students Work on Individual Problems in Ecology

Itasca State Park, one of Minnesota's more primitive areas, is seven miles square and covers an area of approximately 32,000 acres. The numerous lakes of all sizes have an area of about 5,000 acres. Lake Itasca, the largest in the park, is 1,460 feet above sea level. Only a short distance away is a continental divide with an elevation of 1,670 feet.

The wooded shores of the lakes, the virgin forests, the dense swamps and open bogs, beaver dams, eagle nests, turkey vulture roosts, pre-



View of White Cedar Swamp

historic Indian mounds, and other features of interest are accessible over well-marked trails. White, red, and jack pine, white and black spruce, balsam, larch and white cedar are found in pure and mixed stands of all age classes. The hardwood forests are characterized by such trees as hard and soft maple, white and yellow birch, large- and small-toothed aspen, balm of Gilead, basswood, oaks, elms and various other species. The variety of forest types and age classes brings about a corresponding variation in the subordinate vegetation. A state forest adjoining the park affords an excellent opportunity to study the ecology of the various floristic and faunistic successions characteristic of cut-over and burned-over lands. The Chippewa National Forest is only twenty miles to the east. This is one of the oldest and best-developed National Forests in the United States. About thirty miles to the west is the old Lake Agassiz basin with its famous Red River Valley wheat lands. Just north of Bemidji lies the Red Lake Indian Reservation.



Field Collections Are Studied in the Limnology Laboratory

Upper and lower Red Lake together make one of the largest bodies of fresh water, excepting the Great Lakes, within the boundaries of the United States. The Chippewa Indians operate an extensive fishing industry and maintain a hatchery. The coniferous and hardwood forests adjacent supply timber for the tribe's sawmill on a sustained yield basis. All these features are readily accessible from the Biological Station.

The wealth of flora and fauna makes possible the study of systematic botany, zoology, entomology, parasitology, and mycology through living specimens collected by the student. The abundance of fish, birds and wild animals in their native habitat offers an unusual laboratory for studying ecology, entomology, parasitology, and wildlife management and conservation.

### Instruction

The Biological Station was established for the advancement of fundamental knowledge of terrestrial and fresh-water biology. To this end it promotes and provides opportunity for instruction and research in the various fields of biology. Through these activities it hopes to add to the knowledge of the flora and fauna of the Lake States and midwestern regions of similar geological history.

This station is conducted cooperatively by various departments of the College of Science, Literature, and the Arts and the College of Agri-



A Scene from the Shore of the Station

culture, Forestry, and Home Economics of the University of Minnesota through the sponsorship of the Summer Session.

It offers elementary and advanced courses in the fields of biology under competent instructors. Opportunities are also offered for independent study and research by more advanced students.

The Biological Station offers unusual educational opportunities to various groups of students.

1. To graduate students in the field of biology it offers an excellent field laboratory for research.



Virgin Red Pine with an Understory of Balsam Fir  
Note the deer browse-line on the balsam





Students Reach Inaccessible Places by Light and Safe Boats

2. To students of wildlife management it offers an opportunity for life history and ecological studies.

3. To high school teachers it offers an opportunity for advanced study and improvement. It will provide the necessary training to enable the teacher to take biology classes to the field.

4. To undergraduate students in all fields of biology it offers an opportunity for advanced instruction. For those who are not certain in which field their major interest lies it can serve as a help in orienting them.

5. To students in agriculture and home economics who contemplate a career in extension work it offers an opportunity for training in conservation and nature study. These subjects are an important phase of all rural extension work.

6. To teachers of botany, zoology and all phases of biology in all schools and colleges it offers an opportunity for improvement through independent research.

Courses consist of field trips and indoor laboratory work. An effort is made to use the field rather than the laboratory as much as is consistent with good instruction. The scholastic standards of the University are maintained at the station. University credit is given for work satisfactorily completed in the courses registered.

### Facilities for Instruction and Research

The buildings and equipment of the station, while not elaborate, are adequate for all purposes. Its log dormitories and laboratories are located in an attractive forest setting on the shores of Lake Itasca. The main Forestry Lodge, with its assembly room and fireplace, is used for some classes and evening meetings.

Two new one-story laboratory buildings were constructed in 1946. These buildings provide laboratory space for four subjects. They are

well lighted and provided with the necessary tables and chairs, a fine herbarium of the region, insect and fungus collections, bird skins and small mammal skins for study.

The new limnology laboratory is a two-story structure located on the lake shore completely equipped with all facilities. The entire camp is electrically lighted with 110 volt AC.

Since the major part of the instruction is in the field, the laboratory equipment is not elaborate. It is, however, adequate for all ordinary purposes, and arrangements can be made to have special equipment available if the needs can be anticipated. The normal equipment includes a library, all necessary compound and dissecting microscopes, binoculars, collecting equipment, various types of nets, row boats, launches, and a supply of accessories and minor equipment essential for adequate instruction and research.

Arrangements can be made to provide laboratory space for advanced students and research workers. It is desirable to make such arrangements before coming to the station.

### Board and Lodging

The Forestry Lodge is provided with roomy screened-in porches on both the first and second floors. The entire second floor and a portion of the first floor are used as a men's dormitory. This building can accom-



Ecology Students on a Field Trip

moderate from fifty to one hundred students. Five cottages, each accommodating eight students, are assigned for women's dormitories. All dormitories are provided with cots and mattresses, electric lights, stoves, running water, and toilet facilities. Students are asked to bring with them their own bed linen, two or three double wool blankets, a pillow, towels, and toilet articles. The following personal equipment is essential: suitable shoes or boots for field work, a raincoat, heavy socks, field suit or dress, swimming suit, flashlight, desk lamp, notebooks, pocket field books, pencils, hand lenses, dissecting sets and pins, vial and corks, and



A Good Catch of Bluegills Provides Laboratory Material

the recommended and necessary textbooks. When possible, it is recommended that the student write the instructor to secure information on needed texts and equipment. The station operates a supply store where some standard supplies can be secured. It is difficult to take care of trunks.

Meals are served in a well-equipped log dining hall operated under the direction of the administration of the station in consultation with the officers elected by the attending students. The meals are carefully planned, well-balanced, and well-prepared by experienced cooks. Fresh meat, vegetables and fruits are served daily.

It is difficult to indicate what the cost of board will be in these times of rising costs. The maximum cost before the war was \$35. The cost for the 1946 session was \$42 per student. An effort is made to keep the cost as low as possible and yet provide an adequate diet. A payment of \$50 to the treasurer of the commissary will be required during the first few days of the session. Should the cost exceed this, additional payments may be called for; if there is any balance left, it will be refunded to the students.

Limited laundry facilities are available. Before the war, trucks from nearby towns called for and delivered laundry and dry cleaning. This service was not available in 1946, but it is hoped that it may be for the 1947 season. Students are expected to keep their own quarters clean and orderly.

An infirmary with a part-time registered nurse in attendance is available for the care of minor injuries and ills. Medical attention when necessary can be secured from Park Rapids or Bemidji.

About one mile south of the station the State Park Service maintains a large public camp ground. Students with families may avail themselves of the facilities here which include tenting or trailer space, water, fuel, ice, electricity, shower baths and a well-developed beach. Some cabins are available here but it is not the policy of the Park Service to rent them for extended periods. There are numerous resorts in the vicinity providing excellent accommodations for families of graduate students and investigators. Arrangements can usually be made for reduced rates for extended stays. It is expected that as soon as building material becomes readily available the station will be able to provide adequate housing for this class of students.

While it is recognized that the main function of the station is to provide an adequate educational program, yet the recreational program is not neglected. There is ample opportunity for swimming, fishing, and boating. There is opportunity for hikes to points of historic interest and scenic beauty. The social events are handled by the students themselves with some guidance.

The camp operates with a minimum of rules and regulations. Cars are permitted but no garage space is provided. Weekend absences from camp and extended field trips must be reported.

### Fees and Expenses

The following fees are payable by each registrant on or before July 28:

Tuition fee .....	\$25.80
Incidental fee .....	6.00
General deposit fee .....	2.00
Dormitory and dining hall fee .....	5.00
Equipment fee .....	5.00
<b>Total fees .....</b>	<b>\$43.80</b>

Charges for laboratory breakage, library fines, etc., will be deducted from the \$2 deposit and the balance will be refunded by mail after the close of the term.

The estimated cost of \$93.80 includes the \$43.80 registration fee and \$50 for board. It does not include traveling expenses, laundry, and incidental personal expenses.

Tuition and fees are payable at the time of registration on or before July 28. After July 28 the late registration fee will be charged as follows:

Tuesday, July 29 .....	\$2.00
Wednesday, July 30 .....	3.00
Thursday, July 31 .....	4.00
Friday, August 1 .....	5.00

No registration will be accepted after August 1 without approval of the professor in charge and the payment of the \$5 late registration fee.

The courses will begin Monday morning, July 28 and close Friday, August 29.

### Admission and Registration

The courses at the Biological Station are open to all qualified graduate and undergraduate students who have had the usual preliminary courses in biological subjects and to properly qualified high school graduates. Certain courses are especially designed for the teachers of biological subjects in colleges, high schools, and private schools, and others interested in plant and animal life.

Reservation may be completed any time during the months of June and July but not later than July 28. All reservations and inquiries should be directed to the Chairman, Itasca Committee, College Office, University Farm, St. Paul 1, Minnesota, and not to the Office of Admissions and Records or individual departments. Registration will be completed on Monday, July 28 at the station.

Applications for registration for graduate students will be handled through the office of the chairman of the Itasca Committee who will forward them to the dean of the Graduate School for approval. The applicant will then be informed of the status of his eligibility for admission to both the Graduate School and the Biological Station.

Consultants have been appointed in the various fields to answer specific inquiries regarding courses. For specific information in the various fields the following should be consulted.

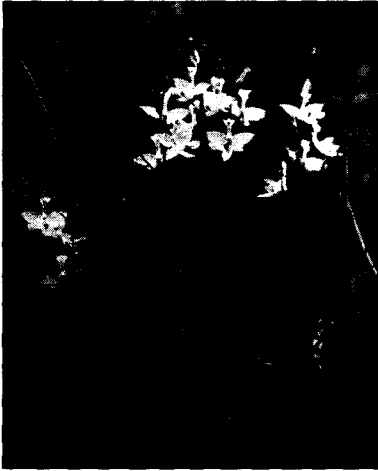
Zoology .....	Mr. Samuel Eddy	Department of Zoology, University of Minnesota, Minneapolis 14, Minn.
Entomology and Economic Zoology .....	Mr. William H. Marshall	Division of Entomology and Economic Zoology, University Farm, St. Paul 1, Minn.
Plant Pathology .....	Mr. Clyde Christensen	Division of Plant Pathology and Botany, University Farm, St. Paul 1, Minn.
Botany .....	Mr. Ernst C. Abbe	Department of Botany, University of Minnesota, Minneapolis 14, Minn.

Most of the courses are offered on a four-credit basis per session. Each four-credit course will occupy two days a week from 8:00 a.m. to 5:00 p.m. An adequate noon hour is provided.

Two subjects are considered the normal load. Special permission must be secured from the director for a lighter or heavier load. Advanced students may take two subjects and in addition one or two credits of a well-delimited research problem.

For the 1947 session not more than forty women and sixty men can be accommodated. Priority of reservations will govern admission.

Mail for students registered at this session should be addressed in care of the Biological Station, Douglas Lodge, Minnesota.



Grass Pink  
(*Calopogon pulchellus*)



One of the Hundreds of Fleshy Fungi  
Available for Study  
(*Amanitopsis vaginata*)



Wintergreen  
(*Gaultheria procumbens*)

Opportunities are also offered to graduate students to pursue their research problem work under the supervision and guidance of the staff without attending regular classes.

Special arrangements may be made with the director of the station by qualified independent guest investigators for the use of the facilities of the station for research in various fields of terrestrial and fresh-water biology.

The graduate students should note that courses numbered 100 and above are considered of graduate value. Courses numbered below 100 carry only undergraduate credit.

### Courses of Instruction

The courses offered at the station will be given according to the following schedule. It is possible that circumstances may necessitate minor changes.

#### SCHEDULE OF COURSES

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Bot. 135	Bot. 116	Bot. 8	Bot. 135	Bot. 116	Bot. 8
Bot. 170	Bot. 176	Bot. 112	Bot. 170	Bot. 176	Bot. 112
Ent. 162	Ent. 59	Ent. 76	Ent. 162	Ent. 59	Ent. 76
Pl.Path. 50	Ent. 68	For. 12	Pl.Path. 50	Ent. 68	For. 12
Zool. 116	Zool. 143	Zool. 55 Zool. 115	Zool. 116	Zool. 143	Zool. 55 Zool. 115

The schedule for other courses and research problems will be arranged to suit individual needs.



Collecting Specimens for Laboratory Work

## COURSES OF INSTRUCTION

The following courses are offered at the Biological Station for the year 1947. The University of Minnesota reserves the right to cancel any courses in which, in the opinion of the director of the Summer Session, the registration is insufficient to warrant a continuation of such courses.

### BOTANY

- 8su. Elements of Field Taxonomy. The identification of common wild flowers, and a general study of the classification and relationship of flowering plants. Field work in forest, swamp, bog, lake and prairie. Texts: Moyle, *Field Key to the Common Non-woody Flowering Plants and Ferns of Minnesota*; *Gray's New Manual of Botany*. (4 cred.; prereq. Bot. 1, or consent of instructor; WS.) Mr. Buell.
- 112su. Aquatic Flowering Plants. A study of the higher plants of aquatic and marsh habitats. Identification and collection; association of species; relations to the habitat; adaptive morphology and food value to wildlife. (4 cred.; prereq. bot. or zool. 10 cred., or consent of instructor; WS.) Mr. Anderson.
- 116su. Summer Flora of Minnesota. A survey of the summer flowering plants and ferns of the state with particular reference to the local flora. Collection and identification of species; distribution in Minnesota; literature and taxonomic methods. Text: *Gray's New Manual of Botany*. (4 cred.; prereq. Bot. 8, or consent of instructor; TF.) Mr. Anderson.
- 135su. Field Research Methods in Ecology. An advanced course in field ecology dealing chiefly with methods of studying community characteristics, rate of vegetational change, and the technique of measuring environmental influences. (4 cred.; prereq. botany 18 cred. incl. Bot. 50 or equiv.; MTh.) Mr. Buell.
- 170su. Bryophytes and Pteridophytes. Field and laboratory study of the mosses, liverworts, ferns and fern allies of Minnesota. Texts: Conard, *How to Know the Mosses*; *The Ferns and Fern Allies of Wisconsin* (obtainable from the Department of Botany, University of Wisconsin). (4 cred.; prereq. 10 cred. of biology, or consent of instructor; MTh.) Mr. Evans.
- 176su. Fresh-water Algae. The taxonomy and limnological relations of the fresh-water algae of Minnesota. Text: Smith, *Fresh-water Algae of the U. S.* (4 cred.; prereq. 10 cred. of biology, or consent of instructor; TF.) Mr. Evans.
- 196su. Problems in Ecology, Taxonomy, Bryology, or Algology. Advanced studies based on individual field work and research. (Cred. ar.; adv. students with proper qualifications.) Mr. Anderson, Mr. Buell, Mr. Evans.

### ENTOMOLOGY AND ECONOMIC ZOOLOGY

- 59su. Field Entomology. A study of the insect fauna in various natural habitats of the park and surrounding areas. The course includes field trips, collection and classification of insects, as well as studies of general morphology, life histories, and habits of local species under ecological conditions governing the distribution of the insect fauna of the region. Text: Lutz, *Field Book of Insects*. (4 cred.; jr., sr.; prereq. Zool. 1-2-3 or equiv.; TF.) Ar.



- 68su. Natural History of the Higher Vertebrates. Life histories, habits, economic importance, and identification of amphibians, reptiles, birds, and mammals, with special reference to the local species. Texts: Peterson, *A Field Guide to the Birds*; Swanson, Surber and Roberts, *The Mammals of Minnesota*; Breckenridge, *Reptiles and Amphibians of Minnesota*. Dissecting set. (4 cred.; prereq. Zool. 1-2-3 or equiv. TF.) Charges for car mileage for field trips in this course will average \$1 to \$2. Mr. Marshall.
- 76su. Techniques of Field Biology. A study of available flora and fauna including the methods of collection, preservation, arrangement, and demonstration of illustrative material and effective presentation to classes. Lectures, laboratory, and field work. This course is primarily designed to meet the needs of teachers of biological subjects. Text: Miller and Blaydes, *Methods and Materials for Teaching Biological Sciences*. (4 cred.; prereq. bot. or zool. 10 cred., or consent of instructor; WS.) Mr. Peters.
- 162su. Ecology of Terrestrial Vertebrates. Detailed studies of the ecological relationships of Northern Minnesota terrestrial vertebrates. Texts: Same as for Course 68 and Elton, *Animal Ecology*. Lectures, laboratory and field work. (4 cred.; prereq. Ent. 68 or Zool. 46-47, and Ent. 163 or equiv. and Bot. 20; MTh.) Charges for car mileage for field trips in this course will average \$1 to \$2. Mr. Marshall.
- 196su. Special Problems in Entomology and Economic Zoology. Advanced work in entomology and economic zoology with ample opportunity for individual research, especially in various phases of faunistic studies in terrestrial, aquatic, and forest entomology and economic zoology. (Cred. ar.; adv. students with proper qualifications.) Mr. Marshall.

#### FORESTRY

- 12su. Field Dendrology. Trees and shrubs found in the Itasca Park region with special reference to identification by means of constant characters. (Not open for credit to students in forestry.) Text required: Rosendahl and Butters, *Trees and Shrubs of Minnesota*. (4 cred.; prereq. bot. 10 cred., or consent of instructor; WS.) Mr. Buell.

#### PLANT PATHOLOGY AND BOTANY

- 50su. Field Mycology. Collection and identification of the common fleshy fungi, molds, and plant parasites. Techniques given for the growing of fungi in natural and artificial media. Field collection, laboratory work, and lectures. (4 cred.; prereq. 9 credits of botany or instructor's permission; MTh.) Mr. C. M. Christensen.
- 210su.\* Special Problems in Mycology. Research work along the following suggested lines: taxonomy of natural groups, fungus flora of particular regions, localities, or habitats; morphology or physiology of special forms. (Cred. ar.; grad.; prereq. 105-106-107.) Mr. C. M. Christensen.

#### ZOOLOGY

- 55su.‡ Natural History of Invertebrates and Fishes. A taxonomic and ecological survey of the local fauna, including life histories and habitats. Text: Eddy and Hodson, *Taxonomic Keys of the Common*

\* This course meets the 9-hour requirements under Plan B for the Master's degree.

‡ A fee of \$1.50 is charged for this course.

*Animals of Minnesota.* (4 cred.; prereq. Zool. 1-2-3 or equiv.; WS.) Mr. Eddy.

115su.‡ Advanced Natural History of Invertebrates and Fishes. An advanced taxonomic and ecological survey of the local fauna including a detailed and independent ecological study of several taxonomic groups. Text: Eddy and Hodson, *Taxonomic Keys of the Common Animals of Minnesota*; Ward and Whipple, *Fresh-water Biology.* (4 cred.; prereq. 15 cred. in zool.; WS.) Mr. Eddy.

116su.‡ Limnology. A study of the conditions of life and the distribution of organisms in the lakes of the Itasca region. Text: Welch, *Limnology.* (4 cred.; prereq. 15 cred. in zool.; MTh.) Mr. Eddy.

143su.‡ Animal Parasites. Parasites of local fauna with special reference to helminths. (4 cred.; prereq. 15 cred. in zool., or consent of instructor; TF.) Mr. Chandler.

198su. Problems in Parasitology, Ecology and Limnology. Principles and further work in special lines adapted to needs of individual students. (Cred. ar.; prereq. Zool. 1-2-3 and special requirements; adv. students.) Mr. Eddy, Mr. Chandler.

‡ A fee of \$1.50 is charged for this course.



Aerial View of Northern Portion of Lake Itasca



# *Bulletin*

of the

## University of Minnesota

### DEPARTMENT OF SPEECH

### Summer Session, 1947

First Term, June 17 to July 25—Second Term, July 28 to August 29

BULLETIN OF THE UNIVERSITY OF MINNESOTA  
DEPARTMENT OF SPEECH

SUMMER SESSION, 1947

Vol. L

No. 15

May 12, 1947

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**SUMMER SESSION FACULTY**

**VISITING LECTURERS:**

MONROE LIPPMANN, Ph.D., Director of the University Theatre, Tulane University, Director of Le Petit Theatre du Vieux Carre, 1946-47.

LIVINGSTONE PATTON, Supervising Teacher at the American School for the Deaf, West Hartford, Connecticut.

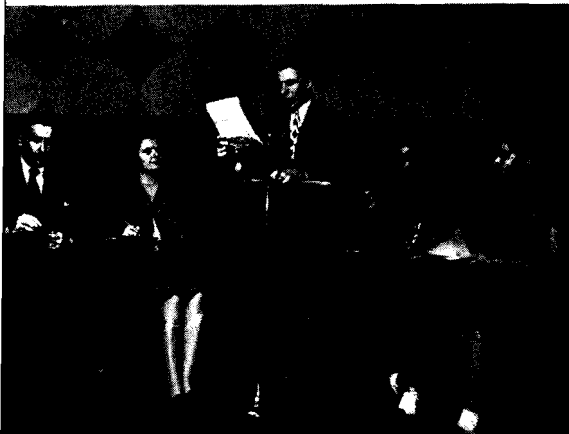
**DEPARTMENTAL STAFF:**

Bryng Bryngelson, Ph.D.  
Howard Gilkinson, Ph.D.  
Delwin B. Dusenbury, Ph.D.  
William S. Howell, Ph.D.  
David W. Thompson, Ph.D.  
Frank M. Whiting, Ph.D.  
Thomas O. Andrus, M.A.  
Myfwany Chapman, M.S.

LeRoy D. Hedgecock, M.A.  
Andrea V. Hetzel, M.F.A.  
E. W. Ziebarth, Ph.M.  
John W. Bystrom, B.A.  
Marion English, B.A.  
Corinne H. Rickert, B.A.  
Barbara P. Swan, B.S.  
Elsie Turner, B.F.A.

Debate

Discussion



**SPEECH CLINIC:** Speech services to students is an all-university function of the clinic—a unit in the personnel program of the Office of the Dean of Students. A laboratory fee of \$3.00 per quarter is charged for students regularly enrolled in academic courses. All types of speech, voice, and hearing disorders are treated. The clinic is newly equipped to render services to those students who are hard of hearing, deafened, or aphasic. A new modernly equipped sound-proof room has been added to the clinical facilities in the new quarters of the clinic, now located on the second floor of Shevlin Hall.

The Speech Clinic also conducts a full-time outpatient speech improvement clinic each term for stutterers fifteen years old and older. Concentrated clinical therapy is given the dysphemetic for six hours a day, five days a week for six weeks.

Students registered in Clinical Methods, Speech Pathology, Lip-reading or courses in the field of hearing have an opportunity to observe the work of the clinic.

Supervised practice in the clinic is offered students registered in Speech 164, 165, or 166 for academic credit. For further information, contact Speech Clinic, Shevlin Hall.

**RADIO SPEECH AND RADIO DRAMA:** The growing interest in the field of radio broadcasting within the college curriculum and in the instruction of high schools and grade schools makes it imperative for teachers and speech students to familiarize themselves with broadcasting techniques. An increasing number of integrated programs are now available for classroom reception in keeping with newer educational policies. In addition to regular classes in Radio Speech and in Production and Direction of Radio Drama, which cover the entire field of radio broadcasting, many opportunities are provided for actual participation in broadcasts through the ever widening facilities of KUOM, the University of Minnesota radio station.

Use of the Caltron for Interpretation



Listening to Records



**THE UNIVERSITY THEATRE:** The Theatre offers work in many phases of theatrical training, both at graduate and undergraduate levels. During the Summer Session particular attention is paid to the special dramatic needs of the high school and elementary school teacher. In addition to the curricular work, the University Theatre presents three series of plays: a popular season comprising modern and classic masterpieces; an experimental season comprising original and unusual plays; and a studio season comprising one-act plays and scenes. These series are organized to give practical experience to a great number of students. Any student registered in the University is eligible to participate in these extra-curricular programs. During this Summer Session the University Theatre will present the following plays: *All the King's Men*, *The Importance of Being Earnest*, *Squaring the Circle*, and *The Male Animal*.



Group Clinic Work



Audiometer

**TEACHER TRAINING:** The Summer Session affords the teacher opportunities for self-improvement through general courses in the fundamentals of speech, as well as special courses in radio, drama, interpretation, and speech correction. The problems of teaching speech in its various branches are emphasized at the graduate level, and special course work is offered to orient the teacher in the field of speech education. Current theories and practices in speech training are discussed and analyzed; voice recording, testing, and other special methods of instruction are evaluated.

**INTERPRETATIVE READING:** This course is for teachers of English and speech who wish to improve their knowledge and skill as oral interpreters of imaginative literature. It is of particular interest to teachers who are charged with the responsibility of preparing readers and speakers for speech festivals and contests. It includes practical problems and carefully selected readings in the esthetic criticism of poetry, prose fiction, and drama, and in the techniques and conventions of oral reading as an art. Exercises in voice improvement are given, and recordings and analyses of individual voice problems are made.

**DISCUSSION:** This course explores the possibilities of discussion as a tool for cooperative thinking, applied particularly to high school and adult education. It offers experience in planning, preparing for, participating in, and leading classroom, public, and radio discussions. The High School League discussion topic for 1947-48 will be developed in demonstration discussions.

## FIRST TERM

	Speech Clinic	Miss Thorn, acting director, and staff
1-2-3su	Fundamentals of Speech	Mr. Gilkinson and staff
31su	Introduction to the Theater	Mr. Whiting
32su	Beginning Acting	Mrs. Turner
34su	Stagecraft	Mr. Andrus
Ed.C.I.59su	Speech in Elementary Grades (Carries credit only in the College of Education)	Mrs. Chapman
61su	Personality Development Through Speech	Mr. Bryngelson
65su	Radio Speech	Mr. Ziebarth
66su	Radio Drama	Mr. Dusenbury
67su	Phonetics	Mr. Dusenbury
81su	Interpretative Reading	Mr. Thompson
93su	Costuming	Miss Hetzel
102su	Argumentation and Persuasion	Mr. Howell
106su	Discussion	Mr. Howell
111su	Stage Direction	Mr. Lippman
122su	Introduction to Research	Mr. Gilkinson
125su	Speech for the Deaf	Miss Patton
127su	Language Training for the Deaf	Miss Patton
151su (Ed.C.I.140su)	The Teaching of Speech	Mr. Gilkinson
152su	Problems of Hearing	Mr. Hedgecock
162su	Speech Pathology	Mr. Bryngelson
164-165-166su	Clinical Methods in Speech Pathology	Mr. Bryngelson
181su	Readings in Speech	Staff
207su	Seminar in Rhetoric and Persuasion	Mr. Howell
291su	Research in Special Problems	Staff

## SECOND TERM

	Speech Clinic	Mrs. Chapman, acting director, and staff
1-2-3su	Fundamentals of Speech	Mr. Gilkinson and staff
33su	Beginning Acting	Mr. Thompson
65su	Radio Speech	Mr. Ziebarth
71su	Play Production	Mr. Thompson
81-82su	Interpretative Reading	Mrs. Turner
91su	Scenic Design	Ar.
112su	Stage Direction	Mr. Whiting
181su	Readings in Speech	Staff
291-292su	Research in Special Problems	Staff