



1953

Bulletin  
of the

EDUCATIONAL COMMISSION FOR THE AMERICAS

preliminary announcement

**UNIVERSITY OF MINNESOTA**

**Minneapolis Minnesota**

**1953**

**SUMMER SESSION**

**First Term**

**June 15-July 18**

**Second Term**

**July 20-August 22**

## FOREWORD

In the words of its first President, William Watts Folwell, the University of Minnesota should be open to all comers. He suggested that it should be founded with a double purpose—the increase in material wealth and comfort of the community—and the culture and satisfaction of the spirit.

He made certain that its facilities were made available even in the summer vacation periods and summer instruction was first authorized by the Regents in 1877.

Today, seventy-five years later, we find the Summer Session has grown from its first class of some 40 students to more than 10,000 students distributed through every field of study and at every academic level from freshman to doctor of philosophy.

This bulletin goes forth to you as a cordial invitation to join this great caravan of culture not only for your own professional, cultural, and spiritual enlightenment, but for those advantages which accrue therefrom to the community.



## **Special Programs**

**Workshop in High School  
Dramatics**

**Family Life Workshop**

**Economic Problems of Today**

**Language Arts**

**Industrial Education Workshop**

**Human Relations in the  
Health Field**

**Psychiatric Nursing**

**European Music Festivals  
Tour**

**Journalism and  
Communications**

**Modern Language Institute  
Russian**

**American Studies Program**

**Scandinavian Area Studies  
Program**

**Greek**

**Efficient Reading**

**WORKSHOP IN  
HIGH SCHOOL  
DRAMATICS**

A feature of the first term will be a Workshop in High School Dramatics designed to fit the needs of both high school teachers and a limited number of outstanding high school students.

**PROGRAM FOR  
HIGH SCHOOL  
STUDENTS**

The program for high school students includes lectures by the director and staff of the University Theatre, reading and acting of scenes from great plays, improvisations of scenes and skits, a technical workshop, and rehearsal of one-act plays. Students will also have an opportunity to appear in a major University Theatre production, probably *The Taming of the Shrew*.

High school students accepted for the workshop must be able to make satisfactory arrangements regarding living quarters; the Theatre can assume no responsibility for them outside of workshop hours.

**COURSES FOR  
TEACHERS**

Regular Summer Session students will select courses from the University Theatre curriculum and other related fields.

**FAMILY LIFE  
WORKSHOP**

Through the cooperation of several departments, a Family Life Workshop (Ed.C.I. 212) will be offered from July 6 to 24 for teachers, administrators, counselors, social workers, research workers, and others actively engaged in family life education. Dr. Reuben Hill and other national leaders offer a synthesis of advanced practice at the graduate level.

**ECONOMIC  
PROBLEMS  
OF TODAY**

A special survey course on current economic problems (Econ. 124, Economic Problems of Today), planned for the nonmajor, will be of particular interest to teachers who wish to be brought up to date in the teaching of social studies. This is a logical sequence to the workshops in economic education held on the campus in recent years.

**LANGUAGE ARTS** The outstanding program in the Language Arts . . . reading, speaking, writing, listening, children's theater, and children's literature . . . in the College of Education, courses which were so valuable to many teachers last summer, will be repeated during the first term.

An Institute at the Center for Continuation Study from June 29 through July 2, with national leaders added to the regular staff, will supplement these courses.

**INDUSTRIAL  
EDUCATION  
WORKSHOP**

The Department of Industrial Education will conduct a 6-credit workshop for experienced teachers throughout the first term. Designed to fill the gaps between early preparation and current requirements for industrial education, work will be done in the newer subjects or areas on curriculum problems, course outlines, teaching guides, methods, instructional aids, evaluation and necessary manipulative work, but the usual type of shop course is not envisioned. Interests and needs will constitute the basis for groupings and individual work assignments. Upon request, the department will provide further details.

**HUMAN  
RELATIONS IN  
THE HEALTH  
FIELD**

Leo W. Simmons, Professor of Sociology at Yale University and presently engaged in social science research dealing with hospital personnel, will conduct a course in human relations in the health field during the first two weeks of the first term. This course is of special interest to graduate nurses, social workers, hospital service personnel, and workers from other related fields. See Nursing 180, page 72.

**PSYCHIATRIC  
NURSING**

A program in psychiatric nursing designed to aid in the clinical preparation of the graduate nurse who may not have had psychiatric nursing in her basic professional curriculum will be offered in the second term. This program will include both classwork and clinical experience. See Nursing 68, page 73.

**EUROPEAN  
MUSIC FESTIVALS  
TOUR**

A tour of the European music festival centers will be conducted by the chairman of the Music Department of the University of Minnesota, leaving New York on June 24 and returning on September 12. The tour will attend the International Musical Eisteddfod at Llangollen, Wales; the Dolmetsch Festival of early English music in Surrey, the Glyndebourne Opera Festival, Sussex, the Shakespeare Memorial Theatre, Stratford on Avon, England; the contemporary English music festival at Cheltenham, Pyrennes-Orientale; open-air concerts and opera in Rome and Florence, the Lyrics Festival in Verona, Italy; International Music Festival, Aix-en-Provence, France; the Lucerne Music Festival, Switzerland; Mozart Festival in Salzburg, Austria; Wagnerian Opera Festival at Bayreuth, Germany. See Mu. 134.

The class will be limited to 19 students who may receive from 3 to 12 credits depending on the scope of the term paper.

Also included are special sight-seeing trips in the countries visited—England, Wales, France, Italy, Switzerland, Austria, Germany, and Holland.

For information write to Dean of Summer Session, 850 Johnston Hall, University of Minnesota, Minneapolis 14.

**JOURNALISM  
AND  
COMMUNICA-  
TIONS**

The program of the School of Journalism offers courses on two levels of interest. First, it provides offerings emphasizing a fundamental knowledge of journalistic techniques and procedures. Journalism majors and advisers of school publications will find this curriculum most useful.

The second level of instruction emphasizes mass communications and their significant role in American life and in professional endeavor. These courses include mass communications, communication media analysis, public opinion and propaganda, international communications and foreign affairs, freedom of the press and communications law, comparative foreign journalism, and communications research. Many of these offerings are open to nonmajors in the Senior College and Graduate School.

**MODERN  
LANGUAGE  
INSTITUTE**

During the first term of the Summer Session, the Modern Language Institute will sponsor residence houses, located near the campus, for graduate and undergraduate students of French, Spanish, and German. All activities will be carried on in the language elected by the student. The directors will be Herman Ramras for the Deutsches Haus, James A. Cuneo for the Casa Hispánica, and Jean Carduner for the Maison Française. In each house there will be native assistants.

**PROGRAMS**

The program will consist of regular departmental courses conducted in the morning; practical conversation sections at the residence houses in the afternoon; and lectures, round-table discussions, plays, films, music, and dances in the evening. Thus, each house will constitute a milieu for training in the language and culture of the country and will provide a unique opportunity for improvement in the spoken language.

The Institute training has proved valuable to students and others who desire training in speaking a foreign language . . . those planning to apply for Fulbright or SPAN scholarships, or to join other foreign study groups . . . teachers or potential teachers of French, Spanish, or German whether or not they are working for graduate degrees . . . men and women training for positions with the government, international organizations, or private business.

**FEES AND  
SCHOLARSHIPS**

Each language program carries 10 quarter credits for the elementary group and 9 for advanced and graduate students. A special fee of \$40, in addition to regular Summer Session fees, is charged for the program offered in a language residence house. Room and board are additional. Several scholarships are available for the German house.

**RUSSIAN**

The courses in Intensive Russian are not offered this summer. It is the intent of the Summer Session to reinstate the Russian program in the summer of 1954.

**AMERICAN  
STUDIES  
PROGRAM**

The American Studies summer program is designed for students and professors from abroad as well as for students from the United States. The usual American courses conducted by the academic departments concerned with American Studies (history, literature, philosophy, art and music, and the social sciences) will be supplemented by special courses. Lectures, concerts, and excursions will also be arranged.

Candidates for all degrees enroll in American courses conducted by the participating departments and in American Studies seminars designed to integrate these courses. Knowledge of a foreign civilization is also required of all candidates.

**SCANDINAVIAN  
AREA STUDIES**

The Scandinavian Area Studies program is held alternate summers at the University of Wisconsin and the University of Minnesota. In the summer of 1953 the program is scheduled to be held at the University of Wisconsin with a staff drawn from both Minnesota and Wisconsin. For particulars consult Professor Einar Haugen, Department of Scandinavian Area Studies, University of Wisconsin, Madison, Wisconsin, or Professor Arik Gustafson, Department of Scandinavian Languages, 13 Folwell Hall, University of Minnesota, Minneapolis 14.

**GREEK**

An elementary Greek course emphasizing the Hellenistic or Koine phase of the language which is of most immediate use in reading the New Testament will be offered both terms. This course is designed essentially for pretheological students and will be limited to a necessary minimum of twenty students. No credit will be allowed until the student satisfactorily completes both the first and second terms of the course.

**EFFICIENT  
READING**

Adult reading needs are a matter of real concern. The course *Efficient Reading* (Rhetoric 47, page 66), designed for the average and above-average adult reader, provides a unique combination of activities for improving reading speed, comprehension, and vocabulary.



## **General Information**

**University Facilities**

**Summer Session Dates**

**Faculty**

**Housing and Food Service**

**Admission and Registration**

**GENERAL  
INFORMATION**

A more complete Summer Session bulletin is issued annually in March. Copies of that bulletin or additional copies of this preliminary bulletin may be obtained by addressing your request to Dean of Summer Session, 850 Johnston Hall, University of Minnesota, Minneapolis 14.

Because the University of Minnesota is on the quarter system, summer is not a "fill-in" period but a time when you can have all the advantages offered during the other three quarters.

There are two terms—the first from June 15 to July 18 and the second from July 20 to August 22. Students may register for subjects of their choice in either or both terms at their discretion.

**UNIVERSITY  
FACILITIES**

The Summer Session student has the facilities of a great educational institution: its faculty . . . libraries . . . laboratories . . . observatories . . . and museums. These are supported by an expanding physical plant consisting of 1,103 buildings with a book value of \$53,481,964.19 and equipment valued at \$22,121,766.50.

**SEVERAL  
CAMPUSES**

The Minneapolis Campus is located on the banks of the Mississippi River, overlooking the heart of the Minneapolis business district. It is readily accessible to St. Paul, offering the recreational and cultural advantages of two large metropolitan centers.



*The Summer Session offices  
are in Johnston Hall.*

Sidewalk bookstalls near the campus offer interesting browsing.



The St. Paul Campus houses the College of Agriculture, Forestry, and Home Economics and the School of Veterinary Medicine with its own laboratories and recreational facilities. The Minneapolis and St. Paul Campuses are joined by an intercampus trolley line which gives regular service free to students enrolled for classes on both campuses.

The Lake Itasca Forestry and Biological Station, located on historically famous Lake Itasca in Itasca State Park, offers courses in various fields of biology during the second term of the Summer Session. (See pages 41 and 67.)

The Duluth Branch Campus is discussed on pages 46-48.

#### **SPEECH AND HEARING CLINIC**

Students with speech and hearing problems may use the facilities of the University Speech and Hearing Clinic during the summer. These offices are located at 21 Shevlin Hall.

#### **LIBRARIES**

Full library privileges are available during the summer. One of the finest university libraries in existence, the University of Minnesota Library contains more than one and one-half million volumes and a wide variety of periodicals and pamphlets.

Large, comfortable reading rooms provide an excellent atmos-

phere for study. Seminars and discussion groups for graduate students and faculty have the use of a separate floor of seminar rooms.

Departmental libraries on both campuses contain special collections of value to students.

Other available library facilities include the Minneapolis Public Library, the St. Paul Public Library, the Minnesota Historical Society, and the James Jerome Hill Reference Library of St. Paul.

**STUDENTS'  
HEALTH  
SERVICE**

The Students' Health Service, in quarters across from the Church Street entrance of the University Hospitals, maintains a dispensary and hospital exclusively for students. The students' hospital provides hospitalization for students whenever necessary. Home calls are made in case of emergency.

The same staff of physicians, dentists, and nurses is on duty throughout the year.

**DATES OF  
SUMMER  
SESSION**

The Summer Session consists of two terms of five weeks each: June 15 to July 18 and July 20 to August 22. Registration and payment of fees for the first term close at 4 p.m. on Monday, June 15. First term classes on the Minneapolis Campus will begin Tuesday, June 16, at 8 a.m. while classes on the St. Paul Campus will begin at 7:30 a.m.

Registration and payment of fees for the second term close at 4 p.m. on Monday, July 20; classes for this term will open Tuesday, July 21.

Most individual courses are planned for completion in a single term.

**FACULTY**

There will be a faculty numbering more than 800. The University of Minnesota realizes Summer Session students expect to become acquainted with, and study under, the regular faculty. Therefore, most of the University's outstanding scholars, eminent in their fields, will be present to teach and to direct research.

*Spacious lawns surround the women's dormitory, Comstock Hall.*



**HOUSING AND  
FOOD SERVICE  
COMSTOCK HALL**

Ada Comstock Hall, a modern residence hall for women, overlooks the Mississippi River and is next to the Coffman Memorial Union. It has excellent living accommodations for 378 students. Well planned, healthful meals are served under the direction of a trained dietitian. Applications for reservations, which should be sent directly to Comstock Hall as early as possible, will be filled in the order of the date received.

Write for applications and additional information to Director of Women's Residences, Comstock Hall, University of Minnesota, Minneapolis 14.

**SANFORD HALL**

Sanford Hall, another University dormitory for women, is located on University Avenue near the entrance to the campus. It will be open to graduates and undergraduates for room only, at very reasonable rates. This provides comfortable living in double and single rooms.

Sanford Hall will not be open during the second term.

For applications and additional information, write as early as possible to Director of Sanford Hall, University of Minnesota, Minneapolis 14.

**WINCHELL  
COTTAGES**

The Winchell Cottages for Women offer attractive, low-cost housing on a cooperative basis, for both terms. They are located on University Avenue near Sanford Hall. No meals are served in the summer.

Residents must furnish their bedding, towels, rugs, and curtains as desired. Students cut expenses by sharing the work in each house.

For applications and additional information, write directly to Director of Winchell Cottages, 212 12th Avenue S.E., University of Minnesota, Minneapolis 14.

**MEREDITH HALL,  
ST. PAUL CAMPUS**

If there is a sufficient number of requests, Meredith Hall on the St. Paul Campus will be open to women during the first term. Inquiries should be made to the Director of Dormitories, School of Agriculture, University Farm, St. Paul 1.

**MEN'S RESIDENCE  
HALL**

Centennial Hall, a new ultra-modern men's dormitory with a large number of single rooms, will be available. A room and board contract (board—Monday through Friday) will be offered provided there is a sufficient number of residents. Otherwise, contracts will be for room only. Early application is suggested. For application forms and additional information, write to Director of Centennial Hall, University of Minnesota, Minneapolis 14.

**DINING HALL,  
ST. PAUL CAMPUS**

Contingent upon the applications, Dining Hall on the St. Paul Campus will be open to men during the first term. Inquiries should be made to the Director of Dormitories, School of Agriculture, University Farm, St. Paul 1.

**ACCOMMODATIONS  
FOR MARRIED  
STUDENTS**

Some units of housing will be available in University Village. Conveniently located between the Minneapolis Campus and the St. Paul Campus, the Village is the housing center for students who have their families with them. For applications, prices, and other details, write Director of Men's Residences, 108 Wesbrook Hall, University of Minnesota, Minneapolis 14.

**PRIVATE  
RESIDENCES**

There is available a considerable number of rooms in private homes and rooming houses. These facilities are University-inspected and approved and are listed with the Student Housing Bureau, 204 Eddy Hall.

All students are required to live in University-approved residences and those taking rooms elsewhere must apply to the director of the Student Housing Bureau for approval. The Housing Bureau also helps married students obtain housekeeping facilities.

**FOOD  
SERVICE**

In addition to dining halls in the dormitories and residence halls, Coffman Memorial Union offers a variety of accommodations.

Well-prepared food at moderate prices and quick, efficient service are featured in the Cafeteria and Fountain Grille.

The Commuters' Lunch Room will be open for those carrying lunches. Party and banquet dining facilities will be available for both lunch and dinner to all campus organizations and groups.

**ADMISSION AND  
REGISTRATION  
ADMISSION**

The courses of the Summer Session are open to all qualified high school graduates, regularly admitted students of the University including those attending regular session, and those with previous college work. Recent high school graduates must be regularly admitted before enrolling in the Summer Session. Students beginning their University attendance during the Summer Session who wish to attend during the academic year must submit credentials in the usual way.

**SPECIAL  
STUDENTS**

Students with previous college work who wish only to attend the Summer Session may do so without filing credentials, provided they are in good standing and are not candidates for a degree. Such students will be classified as "special" for the Summer Session only.

Mature persons (those about 24 years of age or older) who are not candidates for a degree but wish to complete certain specific college subjects may be considered for admission as adult special students.

Attendance during the Summer Session in no way guarantees special students admission to the regular academic year. Special students who wish to be considered for admission to a subsequent term must file regular admission applications early in the summer. Nonresidents whose previous records at Minnesota were above "C" may ordinarily re-enter as regular students.

**GRADUATE STUDENTS**

The procedure for admission of graduate students is discussed on pages 30 and 31.

**CANDIDATE FOR DEGREE**

Those who expect to become candidates for a degree at the University during the Summer Session must have filed an application for admission and have been regularly admitted to a college of the University.

All students should consult the *General Information Bulletin* for detailed requirements governing admission and the granting of degrees. The *General Information Bulletin* and specific college bulletins may be obtained by writing to Office of Admissions and Records, University of Minnesota, Minneapolis 14.

**REGISTRATION DATES**

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

- First term*    Monday, June 15, 8:00 a.m. to 4:00 p.m.
- Second term* Monday, July 20, 8:00 a.m. to 4:00 p.m.

**LATE REGISTRATION**

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

Tuesday, June 16 .....	\$2.00
Wednesday, June 17 .....	3.00
Thursday, June 18 .....	4.00
Friday, June 19 .....	5.00

No registrations are allowed for the first term after Friday, June 19, without special permission of the dean of the school or college concerned, and payment of the late registration fee of \$5.

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

Tuesday, July 21 .....	\$2.00
Wednesday, July 22 .....	3.00
Thursday, July 23 .....	4.00
Friday, July 24 .....	5.00

No registrations will be accepted for the second term later than Friday, July 24, without 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 late registration fees to those who are unable to reach the University during regular registration days.*

**PLACE OF  
REGISTRATION**

At the beginning of the first term, registration in all colleges except the College of Agriculture, Forestry, and Home Economics and the School of Veterinary Medicine will be in the Main Ballroom, Coffman Memorial Union. Registration in the College of Agriculture, Forestry, and Home Economics and the School of Veterinary Medicine will be at 203d Coffey Hall, St. Paul Campus.

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

**CHANGES IN  
REGISTRATION**

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

**FEES**

The following fees are payable each term by each full-time student (whether resident or nonresident) at time of registration and must be paid before registration is complete:

Tuition fee (per term) .....	\$45.00
Incidental fee (per term) .....	10.50
Total fee (per term) .....	<u>\$55.50</u>

**PART-TIME FEES**

The following fees are payable each term at time of registration by each student taking 4 credits or less (whether resident or nonresident) and must be paid before registration is complete:

Part-time tuition fee (4 credits or less) (per term) .....	\$35.00
Incidental fee (per term) .....	10.50
Total fee (per term) .....	<u>\$45.50</u>

**INCIDENTAL FEE**

The incidental fee of \$10.50 per term mentioned above entitles each student to the privileges of Coffman Memorial Union, Health Service, Library, Counseling Bureau, Speech and Hearing Clinic, recreation program, *Minnesota Daily*, and university post-office service.

**SPECIAL FEES**

Regular tuition fees as provided during the academic year will be charged all students in Nursing. In the Schools of Medicine, Dentistry, Law, and Veterinary Medicine, residents pay regular Summer Session tuition fees; nonresidents pay tuition as provided during the academic year. Special tuition fees are collected in the Division of Library Instruction and the Biological Station. All students pay the Summer Session incidental fee.

In addition, certain courses carry a fee as indicated in the section on course fees in the regular *Summer Session Bulletin*.

Graduate students who have completed all of their graduate work with the exception of their thesis may register for *thesis work only* upon payment of \$22.50 tuition per term and the incidental fee.

Summer Session staff members are entitled to the same fee privileges in the summer as during the academic year. Eligible staff members pay at the resident rate in the graduate school as follows: more than 3 credits, \$19.00 per term; 3 credits or less or thesis only, \$9.50 per term; plus incidental fee.

**AUDITORS**                      *Fees for auditors are the same as for students registered for credit.*

**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 quarter credits or two 5-credit courses is considered a full program for either term. Registration for a greater number requires special permission from the Committee on Student Scholastic Standing 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.

## **Summer Recreation**

**Excursions**

**Sports**

**Concerts and Lectures**

**Films**

**University Theatre**

**Coffman Memorial Union**

**St. Paul Campus Union**

**Museum of Natural History**

**University Gallery**



*The University has 25 tennis courts for student use.*

**SUMMER RECREATION**

The summer visitor not only has the parks, lakes, art and music centers, libraries, and museums of the Twin Cities for recreational enjoyment but a planned program of activities offered by the University of Minnesota Summer Session.

**EXCURSIONS**

Conducted excursions may be taken to points of historical, industrial, educational, and recreational interest. The transportation fee is the only cost of these tours.

**SPORTS FACILITIES**

Facilities for healthful exercise are offered by the University's physical education plants. These include recreation fields . . . an 18-hole golf course . . . gymnasiums and swimming pools in Cooke Hall for men and Norris Gymnasium for women . . . Northrop Field containing facilities for baseball, track, and diamond ball . . . 25 tennis courts . . . space for other sports such as badminton, horseshoes, handball, squash, table tennis, and archery.

**SPORTS PROGRAM**

A program of tennis and golf tournaments as well as other competitive sports is arranged each summer. A daily sports hour for women including such activities as aerial darts, badminton.

and table tennis is planned at the Norris Gymnasium. At scheduled hours, swimming pools with attendants and instructors in charge are available for men in Cooke Hall and for women in Norris Gymnasium. Most of these activities have no extra charge except for towel service.

Tennis and golf tickets will be issued to regularly enrolled Summer Session students upon presentation of their fee statements and payment of a small fee. A greens fee is also charged for use of the golf course. Without tickets, a slightly larger charge per session of play is made for use of the tennis courts.

*Minneapolis climate suits the  
golf enthusiasts.*



#### **CONCERTS AND LECTURES**

Through the Department of Concerts and Lectures, the Summer Session provides a program covering a wide field of musical features . . . symphonies . . . chamber music . . . piano and vocal soloists. Convocations and numerous lectures are also

featured in this program. Addresses are by outstanding scientists, literary figures, artists, and observers of national and international affairs.

#### FILMS

A feature film, either foreign or domestic, will be shown one day a week. Another weekly feature is the Newsreel Theater which shows motion pictures of current events, travel pictures, and various educational films. A program of educational films of a type which can be used in the classroom is of special interest to teachers. These film programs are shown with the cooperation of the Department of Audio-Visual Education.



*University Theatre production of A Midsummer Night's Dream using a cast of high school students.*

#### UNIVERSITY THEATRE

Performances of legitimate drama have become an outstanding feature of the Summer Session. The University Theatre, recognized as one of the leading off-Broadway playhouses, will present a season of five exceptional plays.

**COFFMAN  
MEMORIAL  
UNION**

Summer Session students will find an informal, friendly spirit in the Coffman Memorial Union which offers a pleasant respite from the rigors of classroom activities. Quiet and comfortable lounges, efficient dining rooms and varied recreation rooms give the Union a pleasant setting for informal, social, and recreational activities.

*The outdoor terrace overlooking the Mississippi for lounging or dining . . .*



**FACILITIES**

Facilities include billiards, table tennis, and a coeducational game room for recreation . . . the large cafeteria and fountain grille for dining . . . men's, women's, and coeducational lounges for resting and studying . . . the outdoor terrace overlooking the Mississippi for lounging or dining . . . the Terrace Reading Room for recreational reading . . . a modern ballroom for informal dancing parties and dance instruction sessions . . . the University Post Office and Union Bookstore . . . and barber and beauty shops.

**UNION  
PROGRAM**

The Union provides a diversified program during the summer which includes instruction in folk and modern dancing, instruction classes in bridge, personal grooming, and social hours, parties, musical programs, and art exhibits. These are all available to students without charge. Some of the dancing and social hour programs are conducted on the outdoor terrace.



*Students learn new dance steps during summer dance instruction.*

**ST. PAUL  
CAMPUS  
UNION**

The Union on the St. Paul Campus will be open throughout the Summer Session.

Facilities include lounges, newspaper and magazine service, billiards, table tennis, television, photography darkroom, conference rooms, and a kitchenette for use by social groups.

Ice cream, cold drinks, and light lunches are available at the fountain grille. Club service and take-out picnic supplies may be obtained by University groups.

**MUSEUM OF  
NATURAL  
HISTORY**

The Minnesota Museum of Natural History, located on the campus at Seventeenth and University avenues, contains a series of lifelike exhibits of animal and plant life selected from various parts of the state.

In addition to 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 exhibition corridors are open to the public from 9 to 5 o'clock daily and from 2 to 5 o'clock on Saturdays, Sundays, and most holidays during both summer terms.

The Museum's modern auditorium is widely used by many campus departments.

*The Union Art Craft Shop is a popular place for those with hobbies.*



**UNIVERSITY  
GALLERY**

Exhibition space and the office of the University Gallery are in Northrop Memorial Auditorium on the third and fourth floors. In addition to the general exhibitions of paintings, prints, sculp-

ture, and other creative arts, special study exhibitions are arranged to supplement textbooks and lectures in the art classes.

#### RENTAL SERVICE

Students registered for the Summer Session may borrow framed reproductions from the University Gallery during the first week of each term. This rental service will be open from 10:00 a.m. to 1:00 p.m. Wednesday through Friday the first week of the first term, and Tuesday and Wednesday the first week of the second term. The rental fee is 15 cents for one term, or 25 cents for two terms. The pictures are due on Monday of the last week of the term for which they are rented.



*The University Gallery has current exhibits attractively displayed.*

#### ART LIBRARY

A library for art students is in Room 307 of Northrop Memorial Auditorium where reference books are available and pictorial material for class assignments may be studied.



## Schools and Colleges

Graduate School

College of Science, Literature, and the Arts

College of Agriculture, Forestry, and Home Economics and the School of Veterinary Medicine

Institute of Technology

School of Business

Administration

Institute of Child Welfare

College of Education

Physical Education for Men

Physical Education for Women

Library Instruction

Biological Station

General College

School of Dentistry

Medical School

School of Nursing

School of Public Health

**GRADUATE  
SCHOOL**

The Graduate School of the University of Minnesota brings together in a single organization all programs and offerings of the University which lead to the higher degrees of master of arts, master of science, and doctor of philosophy.



*The Graduate School facilities include excellent laboratories for research.*

The University's libraries, laboratories, and clinics, supplemented by libraries, hospitals, and other institutions in the Twin Cities, offer excellent facilities and possibilities for graduate students. These privileges are, in general, open to those who have received Bachelor's degrees from accredited colleges and universities and who are adequately prepared for graduate work in their chosen fields of study.

**APPLICATIONS**

Students must make application for admission at least four weeks before the opening of the term they expect to attend in order

to avoid delay, last-minute disappointment, and possible penalty for late registrations. Applications for admission, except for University of Minnesota graduates, must be accompanied by an official transcript in duplicate of all undergraduate work, including degrees earned and a single official transcript of all graduate work completed. University of Minnesota graduates must submit certified copies of their scholastic records. Application forms may be secured by writing to the Dean of the Graduate School, 316 Johnston Hall, University of Minnesota, Minneapolis 14.

Students, *before their arrival at the University*, should have assurance from the Graduate School that they are adequately prepared and will be accepted as majors in their chosen field. Admission to the Graduate School does not imply admission to candidacy for an advanced degree. After a student has studied in this Graduate School for one or more terms and on application for degree candidacy, the staff will determine whether or not he should be encouraged to work for a degree.

The *Bulletin of the Graduate School* contains detailed information on requirements and work in the Graduate School. A copy may be obtained by writing to the Dean of Admissions and Records, University of Minnesota, Minneapolis 14.

**COLLEGE OF  
SCIENCE,  
LITERATURE,  
AND THE ARTS**

The College of Science, Literature, and the Arts, the major undergraduate college of the University of Minnesota, affords the student a broad program of general education, advanced courses in the liberal arts, and preprofessional training which qualifies him to enter a professional or vocational curriculum. In a few instances such as Journalism and Social Work a full program of professional courses is offered.

Summer courses are selected from the regular curriculum with special emphasis upon the needs and interests of those who wish to further qualify themselves for successful citizenship or vocational improvement. Most curricula in the College lead to the degree bachelor of arts.



*A corner of the art studio in  
Jones Hall.*

**ART**

Professional training in the Department of Art includes professional studio work and industrial art as well as graduate work. The departmental library and galleries will be open for historical and creative research.

**ENGLISH**

A variety of courses useful either for the student interested in literature and literary history and criticism or the student seeking special competence for graduate, professional work or teaching are provided by the Department of English.

**GENERAL  
STUDIES**

Courses in the Department of General Studies cut across departmental lines and are designed particularly for the student specializing in other subjects who wants a liberal understanding of the humanities and the social sciences.

Selections for the summer include basic courses in the humanities in the modern world as well as advanced courses in Roman and medieval heritage and Greek heritage.

**HISTORY**

The summer offerings in the Department of History are carefully selected from the regular curriculum. The student will find a wide choice in American and European, ancient and medieval history.

**MUSIC**

Students interested in obtaining a cultural background, as well as those preparing to become teachers of music and professional performers, may take courses in applied music, music literature, music history, and music theory under nationally known musicians.

A graduate course in Chorus Production (Music 140) under Caro Carapetyan in the second term will give the student opportunity to observe and work with the technical aspects of chorus production by participation in the Summer Session Chorus.

An Instrumental Workshop (Mu.Ed. 115) in the first term and a special course in the Organization and Supervision of Vocal and Instrumental Music in the Elementary Schools (Mu. Ed. 150) in the second term are included in the curriculum of the Department of Music Education.

A European Music Festival Tour will be conducted from June 24 to September 12. This is explained on page 6.

**PHILOSOPHY**

Courses in the Philosophy Department are planned for the student whose objective is an understanding and appreciation of philosophy as a part of a liberal education or preparation for professional work. Also, there are advanced courses for students possessing previous competence in this field.

**PSYCHOLOGY**

Specialized courses in the fields of experimental psychology, human and animal behavior, differential psychology, and social and political psychology are available in the Psychology Department. Included are courses for the nonpsychology major as well as professional courses for those for whom psychology will be essentially a "tool subject" such as the psychology of learning, psychology of individual differences, clinical psychology, and clinical interviewing.

## **SOCIOLOGY**

Sequences in general sociology, social problems and social policy, and social research are among the offerings in the Sociology Department. In cooperation with the School of Social Work, a special sequence is designed as preparation for graduate study in the School of Social Work.

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

## **THE SCHOOL OF VETERINARY MEDICINE**

There are many courses, primarily for graduate students, in the College of Agriculture, Forestry, and Home Economics and in the School of Veterinary Medicine. Most departments correlate thesis and problem work with work in the Agricultural Experiment Station.

Information concerning admission to the Graduate School should be obtained from the Dean of the Graduate School, 321 Johnston Hall. Students wishing information regarding courses at the graduate level should confer with the graduate staff of the department or school in which he will be working.

The undergraduate student also will find courses for his needs.

## **HOME ECONOMICS**

The School of Home Economics will conduct a Household Equipment Workshop in addition to courses for undergraduate students and qualified graduate students in the first term. Two workshops for graduate students will be given in Home Economics Education (see page 78).



*Experiences in one of the  
Home Economics foods  
laboratories.*

**TEACHERS OF  
AGRICULTURE**

High school teachers of agriculture may take advanced courses in those agricultural fields which are applicable to the requirements of the Department of Agricultural Education (see College of Education, page 73).

**INSTITUTE OF  
TECHNOLOGY**

The Institute of Technology includes the College of Engineering, the School of Architecture, the School of Chemistry, and the School of Mines and Metallurgy.

A limited number of courses in civil, electrical, and mechanical engineering; drawing and descriptive geometry; and mathematics and mechanics are listed for students in the College of Engineering.

In the School of Chemistry, inorganic, analytical, organic, and physical chemistry will be given. Students are able to acquire a Master's degree in chemistry by attendance at summer sessions only.

**SCHOOL OF  
BUSINESS  
ADMINISTRATION  
(INCLUDING  
ECONOMICS)**

The School of Business Administration offers a broad foundation in economics and in the several aspects of management of a business organization in addition to specialized courses, available at both undergraduate and graduate levels. The University's location in a metropolitan area presents opportunities for close observation of business in action.

Admission to this School ordinarily follows completion of a two-year prebusiness program in a liberal arts or technical school. The admission requirements take account of the varying needs and interests of students. Under certain circumstances, mature students who have special objectives in business but do not technically meet the formal admission requirements may be admitted to take selected courses consistent with individual objectives.

The undergraduate curriculum is planned both for regular students and for visitors at Minnesota who wish to make progress toward their degrees during the summer.

Graduate work in both economics and business administration is planned to meet the needs of (1) high school and college faculty members and others whose graduate work is limited largely to summer sessions, and (2) graduate students at Minnesota and elsewhere who wish to accelerate their progress toward advanced degrees. Graduate work should be arranged through the Graduate School.

**INSTITUTE  
OF CHILD  
WELFARE**

Courses in the Institute of Child Welfare are planned not only for graduate and undergraduate students but also to meet the needs of experienced teachers and professional workers who wish to increase their knowledge and skill in working with children.

There are beginning and advanced courses in child training, child psychology, child development, childhood education, and parent education. The nursery school, kindergarten, and elementary grades will provide facilities for observation and participation.

Special attention is called to courses listed under *Curriculum and Instruction* and *Methods and Student Teaching* in the College of Education.

The nursery school and kindergarten offers opportunities for observation.



Graduate courses meet some of the requirements for a Master's degree under either Plan A or Plan B.

#### COLLEGE OF EDUCATION

The extensive programs in all departments of the College of Education are planned with emphasis on the problems of teachers, school administrators, counselors, and other educational workers. The first term includes special work for school administrators who hold the Master's degree, with four three-week workshops. Courses required for new state certificates for counselors and elementary school principals are listed in both terms.

In addition to courses in curriculum and instruction, philosophy of education, educational psychology, and administration for both elementary and secondary school staff members, there are courses in vocational fields of business and distributive education, agricultural education, industrial education, and home economics education.

University High School, in its new building, and the Tuttle Demonstration Elementary School will be open for observation during the first term. The Psycho-Educational Clinic will provide opportunity for observation and practice in both terms.

An outstanding program in the language arts is repeated this year in the first term. See *Special Programs*, page 5.

Courses in the College of Science, Literature, and the Arts supplement the professional courses in education. Social sciences and the humanities in General Studies, high school and creative dramatics in the Department of Speech and Theater Arts, the Geography of Minnesota in the second term, and many other courses in the liberal arts departments will be of particular value to elementary and secondary school teachers. Economics 124, Current Economic Problems and Their Analysis (see pages 4 and 80), in the School of Business Administration will help meet the need of teachers for materials in economic education.

#### **WORKSHOPS**

In the first term, there will be two three-week workshops in home economics education and an industrial education workshop on current instructional materials (see page 78).

Two workshops have been planned for representatives of colleges in the North Central area, one in the first term for staff members from liberal arts colleges and a second workshop in the second term for members of teacher-education institutions.

From July 6 to 24 there will be a special three-week Family Life Workshop for professional people in this field. See *Special Programs*, page 4.

Additional information may be obtained from the College of Education office.

#### **PHYSICAL EDUCATION FOR MEN**

Teachers will find a full program of professional courses. Students may work toward the degree of bachelor of science with either a major or minor in physical education or in recreation, master of education with a major in physical education or in recreation, master of arts with a major in physical education, or doctor of philosophy in education with major emphasis in physical education.

**PHYSICAL  
EDUCATION  
FOR WOMEN**

**PROFESSIONAL  
PROGRAMS FOR  
TEACHERS**

Regular professional courses lead to the degree of bachelor of science with major in physical education, master of education with major in physical education offered in the College of Education, master of arts with major in physical education offered in the Graduate School, or doctor of philosophy with major in education and emphasizing physical education and school health education.

Students wishing to qualify as part-time teachers of physical education in Minnesota may take courses toward an undergraduate minor in physical education and an undergraduate minor in school health education.

*American Country Dance  
Instruction.*



The department presents a regular program of teaching demonstrations in physical education during the first term at the Tuttle Demonstration Elementary School. Since the various

colleges of the University either require physical education or give elective credit in this field, certain courses are open to students who wish to satisfy this need or interest.

**RECREATIONAL  
OPPORTUNITIES**

All women students may use the facilities of Norris Gymnasium for Women for leisure recreation . . . recreational swimming . . . tournaments and individual practice in golf, archery, tennis . . . sports demonstrations . . . movies . . . and clinics.

**LIBRARY  
INSTRUCTION**

This division operates only a single eight-week term. Courses are based on a rotation plan alternate summers to provide opportunities for students not able to enroll during the regular academic year to complete all degree requirements by summer attendance only. There are special courses in the summer curriculum for the library science minor to meet the state requirement for teacher-librarians, basic courses required for admission to the Master's degree program and some of the graduate seminars.

College graduates without previous training in library science will need to take basic courses during the summer in order to qualify for the graduate program in the fall.

**DEGREES**

According to the standards of the American Library Association, the basic preparation for placement as a career librarian embraces five years of study beyond secondary school, including one year of professional content. The Master's degree program in the Division of Library Instruction meets this requirement. Inquiries concerning admission to this program should be addressed to the Director, Division of Library Instruction, Minneapolis 14.

The library science minor (23 selective credits) trains qualified students in the College of Education for positions as teacher-librarians (part-time teaching, part-time library work) in schools.

For further information consult the *Division of Library Instruction Announcement*.

**BIOLOGICAL  
STATION**

The Lake Itasca Forestry and Biological Station will be open during the second term. The extensive undergraduate and graduate curriculum in the several fields of biology will include courses in botany, wildlife, vertebrate zoology, entomology, mycology, parasitology, and limnology. (See page 67.)

*Class in Aquatic Botany.*



The Station is ideally situated for field work, has the necessary laboratories for instruction, and has adequate living accommodations. Unusual opportunities exist for independent graduate work and independent research. Students desiring graduate credit must consult the Graduate School concerning admission.

For more detailed information write to Dean of Summer Session, 850 Johnston Hall, University of Minnesota, Minneapolis 14.

**GENERAL  
COLLEGE**

The General College two-year program in higher education leads to the degree of associate in arts. The aim of this program is to give the student a general education which will prepare him for everyday living in our present complex society.

Courses are planned to be as complete as possible in themselves to give an understanding of basic principles. They are not merely introductions to more specialized courses in the same field.

However, students who do not qualify for admission to other colleges of the University because of inadequate preparation or poor high school records may remedy these deficiencies through a careful selection of General College courses.

Courses successfully completed in the Summer Session may be applied toward fulfilling the requirements leading to the degree. For general information about the college program, requirements for the associate in arts degree, and requirements for transfer to other colleges, students should consult one of the administrative or counseling officials or the *Bulletin of the General College*.

**SCHOOL OF  
DENTISTRY**

Clinical instruction in operative dentistry, prosthesis, crown and bridge, oral surgery, pedodontia, periodontia, and oral diagnosis is open to eligible dental students.

Dentistry fees during the Summer Session are: full-time tuition, resident \$90, nonresident \$145; half-time tuition, resident \$45, nonresident \$72.50; incidental fee \$21.

**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 provide the Summer Session student with unusual opportunities for study.

All medical students except members of the present fourth-year class will attend required courses during the first term.

These courses are continued from the spring quarter and are not open to registrants from other medical schools.

However, certain other required courses as well as elective courses in both preclinical and clinical departments will be given during both summer terms for medical students at the University of Minnesota, accredited students from other medical schools and graduate physicians. These courses lead to training programs for physicians, nurses, physical therapists, occupational therapists, medical and X-ray technologists, medical officers of health, public health nurses, public health engineers, and health educators.

#### EXTERNSHIPS

The clinical departments of Medicine, Neurology and Psychiatry, Obstetrics, Pediatrics, Radiology, and Surgery will offer elective externships at the University Hospitals and in the Minneapolis Veterans Hospital. These externships are open to sophomore and junior medical students at the University of Minnesota who have completed the required first Summer Session term, and to physicians and qualified medical students from other institutions during both terms. For a special folder outlining clinical opportunities in the Medical School during the Summer Session, write to Assistant Dean, University of Minnesota Medical School, Minneapolis 14.

#### REGISTRATION AND GRADUATE CREDIT

Registration of students from other medical schools will be on June 15. Students who wish to earn graduate credit must register through the Graduate School office. Final approval of registration in any course in the Medical School must be obtained from the Medical School office. For more detailed information regarding courses, fees, etc., consult the regular *Bulletin of the Summer Session*.

#### SCHOOL OF NURSING

The basic professional program in the School of Nursing leads to the degree of bachelor of science with a major in professional nursing. For the graduate nurse, the School conducts a program leading to the bachelor of science degree in nursing education. A four-quarter certificate program in practical nursing begins in

the fall quarter. Programs leading to the degree of master of education in nursing education and master of nursing administration in nursing service administration are available for qualified professional nurses.

For qualified graduate nurses, there are courses in ward administration, methods of teaching, the survey in nursing education, nursing service administration, cancer nursing, and human relations in the health field.

Students in the School of Nursing working toward the bachelor of science degree in professional nursing and students registered in the practical nursing curriculum will pay the same fees as charged during the academic year; graduate nurses will register in the College of Education or the School of Nursing and pay the Summer Session fees.

**SCHOOL OF  
PUBLIC HEALTH**

During both terms, the School of Public Health carries a broad program of study for professional personnel at both the undergraduate and graduate levels.

Courses will be available for public health nurses and others studying toward a special professional degree in public health. Since the basic course for public health nurses will be divided between the two summer terms, those who have had less than six months of public health nursing experience should plan to attend both terms.

Two workshops will be of special interest to public health nurses. From June 29 to July 11, a work conference will deal with problems of Nursing in Health Programs for Younger Children. During the second term, from July 27 to August 8, a Workshop for Public Health Nursing Field Teachers will bring to the campus a nationally known leader in the field of public health nursing. Both workshops will be limited to an enrolment of 25 participants.

The courses in personal and community health and in school health necessary to meet health requirements of the College of Education will be given.

## **Duluth Branch**

**General Information**

**Recreation**

**Graduate Program**

**Graduate Course in History**

**Painting Workshop**

**Studies in Rural Education**

**Special Offerings in  
Home Economics**

**Bachelor of Science Program**



*Tweed Gallery, dressed in cool ivy and shaded by pines, is a lovely Summer Session asset at Duluth.*

**DULUTH BRANCH  
GENERAL  
INFORMATION**

As a coordinate college of the University of Minnesota, the Duluth Branch is essentially an undergraduate school. Its summer offerings include, however, a selected group of graduate courses.

Overlooking majestic Lake Superior, the Duluth Branch enjoys both the summer coolness and the ever-changing panorama afforded by this, the largest of fresh-water bodies in the world. Lake Superior provides a dramatic spectacle of natural beauty and vigorous interlake commerce.

An average summer temperature of about 70 degrees attracts visitors to Duluth in search of relief from warmer temperatures. A consistently low pollen count, assured by constant vigilance against ragweed, is a special attraction for hay fever sufferers.

Trout streams twist and tumble through Duluth's hills and slopes, emptying into Lake Superior. The famed North Shore stretches out from Duluth's eastern outskirts. The Shore has many trout streams as well as scenic falls, inland lakes, and other features that have made it a nationally known tourist attraction.

**RECREATION**

Few American cities combine so many welcome attributes in both natural and academic surroundings as does Duluth. A few minutes' drive from the campus lie inviting golf courses, trout streams, bathing beaches, bridle trails, picnic grounds, and other recreational facilities.

The Duluth Branch Summer Theater has become a significant tradition. The recreational opportunities so close at hand make it possible to combine study and vacation pleasure.

**GRADUATE  
PROGRAM**

Teachers with degrees who are interested in professional advancement will find a number of excellent courses . . . mainly in elementary and secondary education . . . fully accredited by the University of Minnesota Graduate School. They may be taken with the intention of transferring them to some other institution or using them as part of a master of arts program at the Minneapolis Campus.

Students planning to work toward the advanced degree at Minneapolis may enroll for one or more summers of work at UMD, taking up to a total of approximately 30 hours at Duluth before transferring. For details, write: Coordinator of Graduate Program, University of Minnesota, Duluth Branch, Duluth 5.

**GRADUATE  
COURSE IN  
HISTORY**

Few states boast a more exciting history than Minnesota. Both as a resident of his state and as one interested in an advanced degree, a course in Minnesota and Northwest history with graduate credit will have special appeal to the summer student. Covering the important period from 1849 to 1873, the course is the second in a sequence of three on this subject. The westward movement, sectional strife in the United States, the origin and

*A graduate group in agricultural education at Duluth.*



growth of third parties, agrarian discontent, and the role of the Northwest in attaining the democratic way of life are facets of this stirring period in American history.

**PAINTING  
WORKSHOP**

Again during the second term, a noted American painter, Arnold Blanch, will conduct the annual Summer Session Workshop in Painting. This workshop has fast become a rich tradition at the Duluth Branch, attracting art students from coast to coast.

**STUDIES IN  
RURAL  
EDUCATION**

Howard A. Dawson, executive secretary of the Department of Rural Education, National Education Association, Washington, D. C., one of America's foremost leaders in rural education, will be a member of the Duluth summer faculty during the first term.

Students will have an opportunity to work on problems of curriculum development and the general improvement of education and rural life. Individual attention will be paid to the specific problems faced by each student. Resource personnel will be brought in to assist. For details: Division of Education and Psychology, University of Minnesota, Duluth Branch, Duluth 5.

**SPECIAL  
OFFERINGS IN  
HOME ECONOMICS**

One of the fastest growing activities at the Duluth Branch is its Home Economics program. Latest equipment is a six-unit kitchen in attractive quarters overlooking Lake Superior.

Special offerings each summer make the program appealing to in-service teachers and students preparing for the field. Experienced teachers of home economics will be interested in the workshops and courses to fulfill current requirements for vocational certification of secondary teachers under the Minnesota State Plan for Vocational Education. An experienced teacher may register in a workshop for help in her special field.

**BACHELOR OF  
SCIENCE  
DEGREE**

Teachers wishing to complete work for the bachelor of science degree will find a wealth of undergraduate courses. Aware that many teachers in the region do not have the Bachelor's degree, the Duluth Branch Summer Session has planned courses for the convenience of in-service teachers otherwise handicapped in obtaining their degrees.



## List of Courses

## LIST OF COURSES

THE FOLLOWING LIST of courses may be somewhat revised and amplified in the complete bulletin to meet the changing trend in enrolment. The University of Minnesota reserves the right to cancel courses when competent teaching staff is unavailable.

The number of credits given for each course follows the title of the course in parentheses. 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	2	Introduction to World Ethnology (3)	Spencer
	80	The American Indian (3)	Spencer
	122	Problems in Anthropology (ar.)	Spencer
	140	Field Trip in Archeology (1-12)	Wilford
Second Term	1	Introduction to Anthropology (3)	Ar.
	54	Social Organization (3)	Ar.
	123	Problems in Anthropology (ar.)	Ar.
	140	Field Trip in Archeology (1-12)	Wilford

#### ART

First Term	HISTORY AND CRITICISM		
	2	Great Masters and Movements of Art (3)	Tselos
	67	Nineteenth-Century European and American Painting (3)	Tselos
	157	Nineteenth-Century European and American Painting (3)	Tselos

#### DESIGN

23-24	Drawing, Design I (3)	Collins
73-74-75	Presentation Techniques (3)	Collins

#### PAINTING AND PRINTS

60-61-62	Drawing and Painting II (3)	Myers, Quirt
70-71-72	Drawing and Painting III (3)	Quirt
90-91-92	Print Processes (3)	Myers
150-151-152	Problems in Painting (ar.)	Myers, Quirt
190-191-192	Problems in Printmaking (ar.)	Myers
200-201-202	Advanced Problems in Studio Work (ar.)	Myers, Quirt

#### PHOTOGRAPHY

10	Photography (3)	Liebling
83-84-85	Design and Photography (3)	Liebling
123-124-125	Advanced Photography (3)	Liebling

#### SCULPTURE

40-41-42	Sculpture I (3)	Morton
140-141-142	Metal Sculpture and Jewelry (3)	Morton

<b>Second Term</b>	<b>HISTORY AND CRITICISM</b>	
	1	Introduction to Art (3) ..... Torbert
	138	Twentieth-Century Art in the United States (3) ..... Torbert
	<b>DESIGN</b>	
	23-24	Drawing, Design I (3) ..... Downs
	<b>PAINTING AND PRINTS</b>	
	30-31	Drawing and Painting I (2) ..... Arnest
	60-61-62	Drawing and Painting II (3) ..... Arnest
	70-71-72	Drawing and Painting III (3) ..... Arnest
	150-151-152	Problems in Painting (ar.) ..... Arnest
	200-201-202	Advanced Problems in Studio Work (ar.) ..... Arnest
	<b>PHOTOGRAPHY</b>	
	10	Photography (3) ..... Downs
	83-84-85	Design and Photography (3) ..... Downs
	123-124-125	Advanced Photography (3) ..... Downs
	<b>SCULPTURE</b>	
	40-41-42	Sculpture I (3) ..... Tovish
	80-81-82	Sculpture II (3) ..... Tovish
	180-181-182	Problems in Sculpture (ar.) ..... Tovish

**ASTRONOMY**

<b>First Term</b>	11	Descriptive Astronomy (5) ..... Luyten
	13	Stellar and Practical Astronomy (3) ..... Luyten

**BOTANY**

<b>First Term</b>	4	General Botany (5) ..... Hall
	194	Problems (1-5) ..... Staff
<b>Second Term*</b>	5	General Botany (5) ..... Ar.
	195	Problems (1-5) ..... Staff

**CLASSICS**

<b>First Term</b>	<b>GREEK</b>	
	1-2	Beginning Greek (5) ..... Anderson
<b>Second Term</b>	<b>GREEK</b>	
	1-2	Beginning Greek (5) ..... Anderson
	171	Independent Reading (3) ..... McDonald
	<b>LATIN</b>	
	171	Independent Reading (3) ..... McDonald
	<b>CLASSICS</b>	
	24	Technical Terms (3) ..... McDonald

\* See page 67 for additional courses given at Lake Itasca Biological Station; also page 41.

**COMMUNICATION**

See pages 61; 6 and 55.

**ECONOMICS**

For courses in economics, see School of Business Administration and Department of Economics offerings listed on pages 80 and 81; and page 64.

**ENGLISH**

**First Term**

**COURSES IN LITERATURE**

23	Introduction to Literature (6)	Buckley
38	Modern Literature (3)	Coxe
55	Shakespeare (3)	del Plaine
56	Shakespeare (3)	Ar.
73	American Literature (3)	Marx
75	Chaucer (3)	Ar.
100	Old English (Anglo-Saxon) (6)	Clark
106	Whitman and Mark Twain (3)	Marx
120	The Interpretation of Poetry (3)	Unger
127	Drama, 1660-1870 (3)	Hillhouse
143	Twentieth-Century American Literature (3)	Ar.
147	Middle English Literature Exclusive of Chaucer (3)	Ar.
162	Milton (3)	Unger
165	Introduction to Modern English (3)	Allen
192	American Poetry (3)	Ar.

**COURSES IN COMPOSITION**

4	Freshman Composition (3)	Ar.
5	Freshman Composition (3)	Ar.
6	Freshman Composition (3)	Ar.
27	Advanced Writing (3)	del Plaine
101	The Writing of Fiction (3)	Coxe

**Second Term**

**COURSES IN LITERATURE**

22	Introduction to Literature (6)	Krieger
39	Modern Literature (3)	Steinmann
55	Shakespeare (3)	Blum
56	Shakespeare (3)	Christie
74	American Literature (3)	Kwiat
104	Emerson and Thoreau (3)	Ar.
107	Henry James (3)	Ar.
110	Romantic Poets of the Early Nineteenth Century (3)	Stange
126	Drama, 1660-1870 (3)	Jackson
138	The Nineteenth Century in English Literature (3)	Stange
154	The American Novel (3)	Bowron
156	American Drama (3)	Hornberger

**COURSES IN COMPOSITION**

5	Freshman Composition (3)	Ar.
6	Freshman Composition (3)	Steinmann
28	Advanced Writing (3)	Christie
102	The Writing of Fiction (3)	Blum

**FAMILY LIFE**

See General Studies, page 53.

**FAMILY LIFE EDUCATION, MARRIAGE AND**

See page 73.

**FAMILY LIFE WORKSHOP**

See pages 4 and 74.

**FOREIGN STUDY SEMINAR**

See below.

**GENERAL STUDIES**

**First Term**

**FAMILY LIFE**

- 1 Preparation for Marriage (3) ..... Swan
- 15 The Home and Its Furnishings (3) ..... Ludwig
- 25 Child Development and Adjustment (3) ..... Brieland

**FOREIGN STUDY**

- 161 Seminar for Foreign Study I (6) ..... Conlin, Luckey, Magner, White

**HUMANITIES**

- 1 Humanities in the Modern World I (3) ..... Bryan
- 4 Humanities in the Modern World IV (3) ..... Ross
- 21 American Life I (3) ..... Weiner
- 52 Humanities in the Modern World (3) ..... Bryan
- 61 The Greek Heritage (3) ..... Ross

**NATURAL SCIENCE**

- 165 Science in World Affairs (3) ..... Graubard
- 175 Survey of Science History (3) ..... Graubard

**PERSONAL ORIENTATION**

- 1 How to Study (2) ..... Premack

**SOCIAL SCIENCE**

- 1 Introduction to Social Science (3) ..... Naftalin
- 3 Introduction to Social Science (3) ..... Potter
- 11 International Relations (3) ..... Turner

**Second Term**

**FAMILY LIFE**

- 1 Preparation for Marriage (3) ..... Hansen

**FOREIGN STUDY**

- 162 Seminar for Foreign Study II (6) ..... Conlin, Luckey, Magner, White

**HUMANITIES**

- 2 Humanities in the Modern World II (3) ..... Rosenfeld
- 4 Humanities in the Modern World IV (3) ..... Rosenfeld
- 22 American Life II (3) ..... Kwiat
- 53 Humanities in the Modern World (3) ..... Ames
- 62 The Roman and Medieval Heritage (3) ..... Ames

**PERSONAL ORIENTATION**

- 1 How to Study (2) ..... Tollefson

**SOCIAL SCIENCE**

- 2 Introduction to Social Science (3) ..... Potter

## GEOGRAPHY

<b>First Term</b>	4	Human Geography (5) .....	Broek
	101	West and Central Europe (3) .....	Kish
	144	Political Geography (3) .....	Kish
<b>Second Term</b>	67	Geography of Minnesota (3) .....	Borchert
	107	Geography of the Soviet Union (3) .....	Borchert

## GEOLOGY AND MINERALOGY

<b>First Term</b>	1	General Geology (5) .....	Thiel
	115	Field Work in Southeastern Minnesota (3) .....	Bell
	150	Black Hills Field Course (6) .....	Swain
	170	Geologic Problems (3) .....	Thiel
<b>Second Term</b>	2	Historical Geology (5) .....	Swain
	170	Geologic Problems (3) .....	Swain

## GERMAN

<b>First Term</b>	1	Beginning A (5) .....	Wood
	3-4	Beginning C or Intermediate (5) .....	Pfeiffer
	65	Modern Drama (3) .....	Ramras
	155	Expressionism (3) .....	Wood
	162	Heine (3) .....	Pfeiffer
A Deutsches Haus is being planned. (See page 7.)			
<b>Second Term</b>	2	Beginning B (5) .....	Menze

## GREEK

See Classics, page 51.

## HISTORY

<b>First Term</b>	1	Civilization of the Modern World (3) .....	Ar.
	2	Civilization of the Modern World (3) .....	Ar.
	16	Ancient Civilization, Part III (3) .....	Jones
	20	American History, Part I (3) .....	Ar.
	21	American History, Part II (3) .....	Ar.
	52	Ancient Civilization, Part III (3) .....	Jones
	79	United States in Twentieth Century (3) .....	Beatty
	87	American Colonies, Part II (3) .....	Osgood
	89	Economic History of Modern War (3) .....	Bowditch
	100	History of the Ancient Near East (3) .....	Jones
	107a	European History, 1848-1871 (3) .....	Bowditch
	134	World War II, Part I (3) .....	Deutsch
	144	American Folklore, Part II (3) .....	Jordan
	157	Latin-American History, Part I (3) .....	Beatty
	177c	Readings: Europe in the Twentieth Century (3) .....	Deutsch
186d	Readings: Nineteenth-Century American History (3) .....	Jordan	
187a	Readings: The American West, Part III (3) .....	Osgood	
<b>Second Term</b>	3	Civilization of the Modern World (3) .....	Ar.
	22	American History, Part III (3) .....	Noble
	66a	Renaissance and Reformation (3) .....	Thompson
	88	American Colonies, Part III (3) .....	Tyler
	97a	History of the South, Part I (3) .....	Noble

108a	European History, 1871-1914 (3)	Wolf
139a	American History, 1865-1900 (3)	Loehr
147	American Economic History (3)	Loehr
151	Social and Intellectual History of the United States, Part III (3)	Tyler
178c	Readings: Europe in the Twentieth Century (3)	Wolf

## HOW TO STUDY

See General Studies, Personal Orientation, page 53.

## HUMANITIES

See General Studies, page 53.

## JOURNALISM

<b>First Term</b>	10	Photography (3)	Liebling
	13	Introduction to Reporting (3)	Nixon
	18	Principal Advertising (3)	Perry
	55	Advertising and Newspaper Typography (3)	Barnhart
	82	Supervision of School Publications (3)	Barnhart
	111	International Communications and Foreign Affairs (3)	Park
	113	Mass Communications (3)	Nixon
	115	Communication Media Analysis (3)	Jones
	130	Communication Agencies, Propaganda and Public Opinion (3)	Casey
	210	Research, Mass Communications Problems (3)	Staff
<b>Second Term</b>	86	Advertising, Copy Writing (3)	Perry
	112	Comparative Foreign Journalism (3)	Park
	177	Freedom of Press, Communications Law (3)	Gerald
	210	Research, Mass Communications Problems (3)	Staff

## LATIN

See Classics, page 51.

## MARRIAGE AND FAMILY LIFE EDUCATION

See page 73.

## MATHEMATICS

**First Term** In addition to the following list of courses, the Department of Mathematics will consider offering other courses, such as 8, Commerce Algebra, first term, and 20, Mathematics of Investment, second term, if there is sufficient demand for them. Written requests for courses should be mailed directly to the Department of Mathematics, 119 Folwell Hall, University of Minnesota, Minneapolis 14, before June 1, 1953; decisions as to giving them will be available at the time of registration.

1	Higher Algebra (5)	Zink
6	Trigonometry (5)	Hafstrom
15	Elementary Mathematical Analysis I (5)	Gibbens
30	Analytic Geometry (5)	Carlson
114	Mathematics of Small Vibrations (3)	Kalisch
121	Mathematical Theory of Statistics I (3)	Loud
131	Advanced Algebraic Theory (3)	Kalisch
176	Intermediate Differential Equations (3)	Hatfield
178	Probability (3)	Hatfield

<b>Second Term</b>	6	Trigonometry (5)	Bohn
	7	College Algebra (5)	Hafstrom
	16	Elementary Mathematical Analysis II (5)	Olmsted
	50	Calculus I—Differential Calculus (5)	Lewis
	122	Mathematical Theory of Statistics II (3)	Gelbaum
	124	Foundations of Calculus (3)	Nering
	149	Laplace Transforms (3)	Gelbaum
	188	Topics in Topology (3)	Nering

## MUSIC

<b>First Term</b>	1	Fundamentals (2)	Kendall
	7	Ear Training (3)	George
	10	Introduction to Music (4)	McConkie
	A	Piano (0)	Kendall, Rymer
	D	Voice (0)	Hull, Schuessler
	11	Piano (2-4)	Kendall, Rymer
	12	Voice (2-4)	Hull, Schuessler
	13	Violin (2-4)	Cullen
	13B	Violin (2-4)	Druian
	14	Viola (2-4)	Barton
	15	Violoncello (2-4)	Meltzer
	16	Double Bass (2-4)	Fitch
	17	Flute (2-4)	Arnegard, Winkler
	18	Oboe (2-4)	Angelucci
	19	Clarinet or Saxophone (2-4)	Fitch, Handlon
	20	Bassoon (2-4)	Santucci
	21	Trumpet (2-4)	MacKay
	22	French Horn (2-4)	Linder
	23	Trombone (2-4)	MacKay
	24	Tuba (2-4)	MacKay
	25	Percussion (2-4)	Denecke
	26	Harp (2-4)	Miller
	27	Organ (2-4)	Ar.
	31A	Music Literature (3)	Downes
	60B-61B-62B	Instrumental Ensemble (2)	Druian
	103	Comparative Harmony (4)	George
	106A	American Music (3)	McConkie
	125	History of Opera (3)	Downes
	127-128-129	Composition (2)	McConkie
	134	International Music Festivals (3-12)	Oberg
	204	Graduate Applied Music (3)	Ar.
	212	Special Problems in Music (3-9)	Downes
	227-228-229	Seminar in Composition and Orchestration (3)	George
<b>Second Term</b>	8	Harmony (3)	Fetler
	A	Piano (0)	Stephens
	D	Voice (0)	Carapetvan
	11	Piano (2-4)	Stephens
	12	Voice (2-4)	Carapetvan
	13	Violin (2-4)	Cullen
	13B	Violin (2-4)	Druian
	14	Viola (2-4)	Barton
	15	Violoncello (2-4)	Meltzer
	16	Double Bass (2-4)	Fitch
	17	Flute (2-4)	Arnegard, Winkler
	18	Oboe (2-4)	Angelucci
	19	Clarinet or Saxophone (2-4)	Fitch, Handlon

20	Bassoon (2-4)	Santucci
21	Trumpet (2-4)	MacKay
22	French Horn (2-4)	Linder
23	Trombone (2-4)	MacKay
24	Tuba (2-4)	MacKay
25	Percussion (2-4)	Denecke
26	Harp (2-4)	Miller
27	Organ (2-4)	Ar.
43A	University Chorus (1)	Carapetyan
60B-61B-62B	Instrumental Ensemble (2)	Druian
76	Form and Analysis (3)	Stephens
102	Problems in Counterpoint (4)	Fetler
104A	American Music (3)	Ar.
127-128-129	Composition (2)	Fetler
134	International Music Festivals (3-12)	Oberg
140	Chorus Production (3)	Carapetyan
204	Graduate Applied Music (3)	Ar.
209-210-211	Advanced Topics (3)	Ar.
212	Special Problems (3-9)	Ar.
227-228-229	Seminar in Composition and Orchestration (3)	Fetler

## NATURAL SCIENCE

See General Studies, page 53.

## PERSONAL ORIENTATION

See General Studies, page 53.

## PHILOSOPHY

<b>First Term</b>	1	Problems of Philosophy (3)	Hospers
	2	Logic (3)	Shaw
	50	History of Philosophy (Ancient) (3)	Shaw
	113	Kierkegaard and Scandinavian Philosophy (3)	Holmer
	159	Principles of Esthetics (3)	Hospers
182	Philosophy of Religion (3)	Holmer	
<b>Second Term</b>	2	Logic (3)	Sellars
	3	Ethics (3)	Terrell
	52	History of Philosophy (Modern) (3)	Sellars
	114	Introduction to American Philosophy (3)	Brodbeck
	135	Philosophy in Modern Literature (3)	Terrell
153	Philosophy of Science (3)	Brodbeck	

## PHYSICS

<b>First Term</b>	1	Introduction to Physical Sciences (Mechanics) (3)	Valasek
	1a	Introduction to Physical Sciences (Mechanics— with lab.) (4)	Valasek
	13	General Physics for Engineers—Third Quarter, Part I (Sound and Light) (2½)	Ar.
<b>Second Term</b>	2	Introduction to Physical Sciences (Heat and Electricity) (3)	Rassweiler
	2a	Introduction to Physical Sciences (Heat and Electricity—with lab.) (4)	Rassweiler
	13	General Physics for Engineers—Third Quarter, Part II (Sound and Light) (2½)	Rassweiler

**POLITICAL SCIENCE**

<b>First Term</b>	A	The State in the Modern World (3)	Turner
	1	American Government and Politics (3)	Naftalin
	85	Problems of World Politics (3)	Mills
	108	Legislative Organization and Procedure (3)	Short
	121	Municipal Administration (3)	Ludwig
	124	Recent Social Legislation (3)	Christensen
	155	Latin-American Government (3)	Christensen
	162	Recent Political Thought (3)	Sibley
	195	Colonial Government and Problems of Imperialism (3)	Mills
	207	Seminar in Theories of Law and Politics (3)	Sibley
<b>Second Term</b>	B	The State in the Modern World (3)	McClosky
	1	American Government and Politics (3)	McLaughlin
	2	American Government and Politics (3)	Warp
	136	Administration of Justice (3)	Warp
	143	Government of the U.S.S.R. (3)	McClosky
	178	Foreign Relations, Agencies and Methods (3)	McLaughlin

**PSYCHOLOGY**

<b>First Term</b>	1-2	General Psychology (6)	Russell
	4-5	Introduction to Laboratory Psychology (4)	Phillips
	90	Readings in Psychology (ar.)	Rosen
	125-126	Psychology of Individual Differences (6)	Jenkins
	127	Projects in Psychology of Individual Differences (3)	Rosen
	144-145	Abnormal Psychology (6)	Bird
	171-172	Clinical Psychology (6)	Schofield
	185	Clinical Interviewing (3)	Rosen
	210	Research in Psychology (ar.)	Rosen
	250	Topics in Psychology (ar.)	Rosen
<b>Second Term</b>	1-2	General Psychology (6)	McMurdo
	4-5	Introduction to Laboratory Psychology (4)	Helmstadter
	90	Readings in Psychology (ar.)	Longstaff
	111	Frontiers of Psychology (3)	Heron
	127	Projects in Psychology of Individual Differences (3)	Longstaff
	128	Psychology of Learning (3)	Heron
	156	Psychology of Advertising (3)	Longstaff
	210	Research in Psychology (ar.)	Longstaff
	250	Topics in Psychology (ar.)	Longstaff

**ROMANCE LANGUAGES**

<b>First Term</b>	FRENCH		
	1	Beginning French (5)	Ar.
	3-4	Intermediate French (5)	Ar.
	55	French Conversation (2)	Nahas
	76	French Culture (2)	Carduner
	116	Seventeenth-Century French Literature: Theater (2)	Virtanen
	158	Contemporary French Literature: Gide, Valéry, Proust (2)	Virtanen

A Maison Française is being planned. (See page 7.)

## SPANISH

1	Beginning Spanish (5)	Ar.
3.4	Intermediate Spanish (5)	Grismer
56	Phonetics and Diction (2)	Floripe
73	Latin-American Culture (2)	Cunco
165	Great Figures in Spanish Literature (2)	Grismer
259	Directed Readings (ar.)	Grismer

A Casa Hispánica is being planned. (See page 7.)

## Second Term FRENCH

2	Beginning French (5)	Cleifton
120	Rousseau (2)	Cleifton
259	Directed Readings (ar.)	Cleifton

## SCHOOL OF SOCIAL WORK

<b>First Term</b>	Soc.91	Case Method Applied to Human Problems (3)	Cohen
	C.W.141	Behavior Problems in Older Children (3)	Ar.
	205	International Understanding Through Social Welfare (3)	Boehm
	213	Field Training in Social Work (3-6)	Boehm
	293	Special Studies in Social Work (1-9)	Boehm
	300	General Seminar (3)	Boehm
<b>Second Term</b>	C.W.140	Behavior Problems in Younger Children (3)	Blodgett
	206	Group Process in Learning (3)	Pernell
	214	Field Training in Social Work (3-6)	Pernell
	275	Principles of Administration Applied to Social Work (3)	Kidneigh
	282A	Principles of Group Work (3)	Pernell
	293	Special Studies in Social Work (3)	Pernell

## SOCIAL SCIENCE

See General Studies, page 53.

## SOCIOLOGY

<b>First Term</b>	1	Introduction to Sociology (3)	Mouratides
	14	Rural Sociology (3)	Mouratides
	53	Elements of Criminology (3)	Vold
	91	Case Method Applied to Human Problems (3)	Cohen
	122	Sociology of Conflict (3)	Vold
	170	Analytical Social Theory (3)	Martindale
	172	Backgrounds of Modern Social Thought (3)	Martindale
<b>Second Term</b>	1	Introduction to Sociology (3)	C. D. Johnson
	49	Social Problems (3)	Taves
	112	World Population Problems (3)	Ramsey
	141	The Family (3)	A. L. Johnson
	144	Social Stratification (3)	Ramsey
	180	Methods of Social Research (3)	C. D. Johnson

## SPEECH AND THEATER ARTS

<b>First Term</b>	1	Fundamentals of Speech (3)	Gilkinson, Smith, and staff
	2	Fundamentals of Speech (3)	Gilkinson, Smith, and staff
	3	Fundamentals of Speech (3)	Gilkinson, Smith, and staff
	32	Beginning Acting (3)	Hartig

61	Personal Development Through Speech (3)	Bryngelson
83	Interpretative Reading (3)	Thompson
106	Discussion (3)	Smith
111	Stage Direction (3)	Whiting
115	Playwriting and Production (3)	Thompson
116	Playwriting and Production (3)	Thompson
122	Introduction to Research (3)	Gilkinson
162	Speech Pathology (3)	Bryngelson
164-165-166	Clinical Methods and Practice in Speech Pathology (3)	Bryngelson

For Teaching of Speech see Ed.C.I. 140, listed under the College of Education, page 74.

<b>Second Term</b>	1	Fundamentals of Speech (3)	Ziebarth and staff
	2	Fundamentals of Speech (3)	Ziebarth and staff
	3	Fundamentals of Speech (3)	Ziebarth and staff
	33	Beginning Acting (3)	Moulton
	65	Radio and Television Speech (3)	Ziebarth
	67	Phonetics (3)	Fletcher
	71	Play Production (3)	Graham
	93	Stage Costuming (3)	Moulton
	103	Argumentation and Persuasion (3)	Howell
	106	Discussion (3)	Howell
	119	Introduction to Speech Correction (3)	Fletcher
	131	Creative Dramatics (3)	Graham
	204	Debate Coaching (2)	Howell

## ZOOLOGY

<b>First Term</b>	1	General Zoology (5)	Ar.
	51	Introduction to Parasitology (5)	Wallace
	83	Introduction to Genetics and Eugenics (3)	Ar.
	100	Zoological Techniques (ar.)	Ar.
	197	Problems (ar.)	Staff
<b>Second Term*</b>	2	General Zoology (5)	Ar.
	198	Problems (ar.)	Ar.

## INSTITUTE OF TECHNOLOGY

### COLLEGE OF ENGINEERING

#### CIVIL ENGINEERING

<b>First Term</b>	23	Summer Camp (9)	Fant, Cornell, Whittington
	31	Stresses in Structures (3)	Andersen
	32	Design in Steel (3)	Andersen
<b>Second Term</b>	33	Design in Timber (3)	Andersen
	147	Foundations (3)	Andersen

#### DRAWING AND DESCRIPTIVE GEOMETRY

<b>First Term</b>	4	Engineering Drawing (3)	Williams
	6	Engineering Drawing (3)	Schuck

\* See page 67 for additional courses given at Lake Itasca Biological Station; also page 41.

	22	Structural Detailing (2) .....	Schuck
	28	Drafting (aeronautical engineers) (2) .....	Williams
	34	Lettering (1) .....	Williams
<b>Second Term</b>	5	Engineering Drawing (3) .....	Palmer
	10	Solid Geometry (3) .....	Springer
	21	Drafting (civil engineers) (2) .....	Palmer
	23	Structural Detailing (2) .....	Springer
	34	Lettering (1) .....	Palmer

### ELECTRICAL ENGINEERING

<b>First Term</b>	15	Elements of Electrical Engineering (3) .....	Caverley
	16	Elements of Electrical Engineering Laboratory (2) .....	Hartig
	36	Electrical Engineering Survey (3) .....	Caverley
<b>Second Term</b>	37	Electrical Engineering Survey (3) .....	Hartig

### ENGLISH (ENGINEERING)

<b>First Term</b>	6	Written, Spoken Communication (3) .....	Haga
	85	Advanced Technical Communication (3) .....	Haga
<b>Second Term</b>	86	Advanced Technical Communication (3) .....	Lippert

### GENERAL ENGINEERING

<b>First Term</b>	70	Slide Rule (1) .....	Schuck
<b>Second Term</b>	70	Slide Rule (1) .....	Springer

### INDUSTRIAL ENGINEERING

<b>First Term</b>	90*	Industrial Assignment (1½) .....	Algren
	92*	Industrial Assignment (1½) .....	Algren
	94*	Industrial Assignment (1½) .....	Algren
	150	Elements of Industrial Engineering and Management (3) .....	Block
<b>Second Term</b>	90*	Industrial Assignment (1½) .....	Algren
	92*	Industrial Assignment (1½) .....	Algren
	94*	Industrial Assignment (1½) .....	Algren

### MATHEMATICS AND MECHANICS

<b>First Term</b>	12A	College Algebra and Trigonometry II (5) .....	Thompson
	13	Analytic Geometry (5) .....	Fulks
	26	Statics (5) .....	Kirmser
	80	Differential Equations (3) .....	Ar.
	127	Dynamics (5) .....	Loye
	128	Strength of Materials (5) .....	Miller
	141	Materials Testing (1) .....	Miller
	150	Intermediate Calculus (3) .....	Munro
	154	Vector Analysis (3) .....	Munro
	168	Elementary Theory of Complex Variables (3) .....	Ar.

\* These courses carry 3 credits and will be given on quarter basis. Credit not given for first term unless course is completed second term.

Second Term	13	Analytic Geometry (5)	Braden
	25	Integral Calculus (5)	Indritz
	26	Statics (5)	James
	80	Differential Equations (3)	Polansky
	127	Dynamics (5)	Wilcox
	128	Strength of Materials (5)	Doeringsfeld
	152	Advanced Calculus (3)	Polansky

### MECHANICAL ENGINEERING

First Term	12	Molding and Casting Processes (2)	Holtby
	14	Machine Tool Operation (2)	Crowder
	24	Elements of Machine Design (3)	Baillif
	33	Mechanical Engineering Laboratory I (2)	LaJoy
	90*	Industrial Assignment (1½)	Algren
	92*	Industrial Assignment (1½)	Algren
	94*	Industrial Assignment (1½)	Algren
	131	Thermodynamics (3)	Ibele
	160	Heating and Ventilation (3)	Algren
	Second Term	22	Mechanisms (2)
34		Mechanical Engineering Laboratory II (2)	LaJoy
35		Mechanical Engineering Laboratory III (2)	LaJoy
90*		Industrial Assignment (1½)	Algren
92*		Industrial Assignment (1½)	Algren
94*		Industrial Assignment (1½)	Algren
121		Machine Design (2)	Palmer
141		Heat Power Engineering (3)	Lee

### SCHOOL OF CHEMISTRY

#### INORGANIC CHEMISTRY

First Term	1	General Inorganic Chemistry (4)	Brasted
	4	General Inorganic Chemistry (4)	Maynard
	5	General Inorganic Chemistry (5)	Brasted
	9	General Inorganic Chemistry (5)	Maynard
	11	Semimicro Qualitative Analysis (4)	O'Brien
	12	Semimicro Qualitative Analysis (5)	O'Brien
	103	Atomic Structure and the Properties Based Thereon (3)	O'Brien
	104	Chemistry of More Familiar Elements Based on Structural and Periodic Relationships (4)	Brasted
	105	Coordination Compounds (3)	Maynard
	301	Research in Inorganic Chemistry (ar.)	Brasted, O'Brien, Maynard
Second Term	2	General Inorganic Chemistry (4)	Pray
	5	General Inorganic Chemistry (4)	Pervier
	7	General Inorganic Chemistry (5)	Pray
	10	General Inorganic Chemistry (5)	Pervier
	11	Semimicro Qualitative Analysis (4)	Pervier
	12	Semimicro Qualitative Analysis (5)	Pervier
	108	Nonaqueous Systems (3)	Pray
	301	Research in Inorganic Chemistry (ar.)	Pervier, Pray

\* These courses carry 3 credits and will be given on quarter basis. Credit not given for first term unless course is completed second term.

## ANALYTICAL CHEMISTRY

First Term	1	Quantitative Analysis (Gravimetric) (5)	Herr
	7	Quantitative Analysis (Premedic) (4)	Herr
	123	Advanced Analytical Chemistry (3)	Herr
	301	Research in Quantitative Analysis (ar.)	Herr
Second Term	2	Quantitative Analysis (Volumetric) (5)	Herr
	7	Quantitative Analysis (Premedic) (4)	Herr
	123	Advanced Analytical Chemistry (3)	Herr
	301	Research in Quantitative Analysis (ar.)	Herr

## ORGANIC CHEMISTRY

First Term	61	Elementary Organic Chemistry (4)	Fenton
	101	Intermediate Organic Chemistry (3)	Lauer
	102	Organic Qualitative Analysis, Elementary Course (4)	Lauer
	301	Research and Thesis in Organic Chemistry (ar.)	Fenton
Second Term	62	Elementary Organic Chemistry (4)	Noland
	108	Physical Techniques in Organic Chemistry (3)	Fenton
	139	Advanced Organic Preparations (4)	Fenton
	302	Research and Thesis in Organic Chemistry (ar.)	Noland

## PHYSICAL CHEMISTRY

First Term	104	Physical Chemistry Laboratory (2)	Lipscomb
	105	Physical Chemistry Laboratory (2)	Lipscomb
	107*	Elementary Physical Chemistry (Premedic) (3)	Lipscomb
	301	Physical Chemistry Research (ar.)	Staff
Second Term	105	Physical Chemistry Laboratory (2)	Lipscomb
	106	Physical Chemistry Laboratory (2)	Lipscomb
	108*	Elementary Physical Chemistry (Premedic) (3)	Lipscomb
	301	Physical Chemistry Research (ar.)	Staff

## SCHOOL OF MINES AND METALLURGY

### MINING

First Term	15	Field Work in Surveying of the Iron Ranges of Minnesota (4 weeks starting June 15) (6)	Lacabanne, Yardley
	151-152-153	Problems in Mining (ar.)	Ar.
Second Term	151-152-153	Problems in Mining (ar.)	Ar.

### PETROLEUM

First Term	155-156-157	Problems in Petroleum Engineering (ar.)	Ar.
Second Term	155-156-157	Problems in Petroleum Engineering (ar.)	Ar.

### METALLURGY

First Term	124	Problems in Mineral Dressing (ar.)	Ar.
	170-171	Problems in Metallography (ar.)	Ar.
	221	Problems in Metallurgy (ar.)	Ar.
Second Term	124	Problems in Mineral Dressing (ar.)	Ar.
	170-171	Problems in Metallography (ar.)	Ar.
	221	Problems in Metallurgy (ar.)	Ar.

\* The entire course (107 and 108) must be completed before credit will be assigned (6 credits).

## COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

### AGRICULTURAL BIOCHEMISTRY

First Term	118	Laboratory Problems in Biochemistry (3-5)	Staff
	203	Research Problems (2-5)	Staff
Second Term	118	Laboratory Problems in Biochemistry (3-5)	Staff
	203	Research Problems (2-5)	Staff

### AGRICULTURAL ECONOMICS

First Term	180	Farm Accounting (3)	Engene
	200	General Seminar in Agricultural Economics (3)	Staff
Second Term	201	General Seminar in Agricultural Economics (3)	Staff

### AGRICULTURAL EDUCATION

See courses listed on page 73 under the College of Education.

### AGRICULTURAL ENGINEERING

First Term	40	Mechanical Training (2-4)	Dent
	41	Metal Work (2-4)	Dent
Second Term	41	Metal Work (2-4)	Dent
	42	Art Metal Work (2-4)	Dent

### AGRONOMY AND PLANT GENETICS

First Term	201	Research in Farm Crops (3-9)	Dunham, Schmid
	241	Research in Plant Genetics (3-9)	Burnham, Rinke, Thomas, Lambert
	244	Laboratory Methods in Plant Breeding (1½)	Staff
Second Term	201	Research in Farm Crops (3-9)	Dunham, Schmid
	241	Research in Plant Genetics (3-9)	Burnham, Rinke, Thomas, Lambert
	244	Laboratory Methods in Plant Breeding (1½)	Staff

### ANIMAL HUSBANDRY

First Term	213	Research in Animal Husbandry (3-5)	Ferrin, Hanson, Harvey, Winters
Second Term	213	Research in Animal Husbandry (3-5)	Ferrin, Hanson, Harvey, Winters

### DAIRY HUSBANDRY

First and Second Terms	208	Research in Dairy Production (ar.)	Fitch, Gullickson, Petersen, Hervey
	209	Research in Dairy Manufacturing (ar.)	Combs, Coulter, Thomas
	215	Research in Dairy Bacteriology (ar.)	Olson, Jezeski

## ENTOMOLOGY AND ECONOMIC ZOOLOGY

<b>First Term*</b>	197	Introduction to Research (2 or more) .....	Staff
	204	Research in Entomology (3 or more) .....	Staff
<b>Second Term†</b>	197	Introduction to Research (2 or more) .....	Staff
	204	Research in Entomology (3 or more) .....	Staff

## FORESTRY

<b>First Term</b>	<i>(Offered at Lake Itasca)</i>		
	<i>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.</i>		
	2	Important Forest Plants (2) .....	Rees
	5	Field Forest Ecology (2) .....	Hansen
	6	Field Measurements (2) .....	Brown
	Ent.13	Field Zoology (2) .....	Krogstad, Hofslund
<b>Second Term</b>	203-204	Research Problems in Forest Management (ar.) .....	Kaufert, Schneider, Hansen, Duncan, Hall, Brown, Meyer, Schantz-Hansen
	213-214	Research Problems in Forest Utilization (ar.) .....	Kaufert, Hossfeld, Rees

## HOME ECONOMICS

<b>First Term</b>	F.L.15	The Home and Its Furnishings (3) .....	Ludwig
	25	Design Applied to Crafts (3) .....	Myren
	28	Construction and Refinishing of Home Furnishings (3) .....	Myren
	45	Quantity Cookery (6) .....	Ar.
	49	Household Equipment Workshop (3) .....	Bonnell
	86	Home Management Laboratory, Sec. I (4) .....	Ar.
	86	Home Management Laboratory, Sec. II (4) .....	Ar.
	140	New Developments in Food Preparation (3) .....	Trammell
	150	Textile Problems (3) .....	Knight
	153	Recent Developments in Clothing Construction (3) .....	Knight
	172	Current Developments in Nutrition (3) .....	Leichsenring
<b>Second Term</b>	180	Home Planning and Furnishing (5) .....	Ludwig
	184	Home Management Principles (3) .....	Ar.
<b>Second Term</b>	86	Home Management Laboratory, Sec. I (4) .....	Ar.
	86	Home Management Laboratory, Sec. II (4) .....	Ar.

## HOME ECONOMICS EDUCATION

See Home Economics Education, College of Education, page 78.

## HORTICULTURE

<b>First Term</b>	76	Landscape Construction and Maintenance (3) .....	Phillips
	190-191-192	Special Problems in Horticulture (2-4) .....	Alderman and staff
	247	Report on Special Horticultural Topics (9 or less) .....	Alderman and staff
	249	Research in Horticultural Crop Breeding (9 or less) .....	Currence, Krantz, Hutchins, Wilcox

\* See Forestry for other course offerings.

† See page 67 for additional courses given at Lake Itasca Biological Station; also page 41.

<b>Second Term</b>	190-191-192	Special Problems in Horticulture (2-4) .....	Alderman and staff
	247	Report on Special Horticultural Topics (9 or less) .....	Alderman and staff
	249	Research in Horticultural Crop Breeding (9 or less) .....	Currence, Krantz, Hutchins, Wilcox

### PLANT PATHOLOGY AND BOTANY\*

<b>First and Second Terms</b>	206	Research in Plant Pathology (ar.) .....	Stakman, J. J. Christensen, Eide, Hart, C. M. Christensen, Dosdall, Kernkamp, King
	210	Special Problems in Mycology (ar.) .....	Stakman, C. M. Christensen, Dosdall
	257	Research Problems in Applied Plant Physiology (ar.) .....	Landon
	263	Research Problems in Agricultural Botany (ar.) .....	Larson, Stakman

### POULTRY HUSBANDRY

<b>First and Second Terms</b>	214	Research in Poultry Husbandry (ar.) .....	Sloan and staff
	215	Research in Poultry Nutrition (ar.) .....	Sloan
	216	Research in Poultry Breeding (ar.) .....	Shoffner

### RHETORIC

<b>First Term</b>	47	Efficient Reading (2 sec.) (3) .....	Brown
<b>Second Term</b>	47	Efficient Reading (3) .....	Wright
	51	Exposition (3) .....	Nichols

### SOILS

<b>First and Second Terms</b>	202†	Research Problems in Soils (2-5) .....	Rost, McMiller, Burson, Caldwell, MacGregor, Arncman
	See also Bacteriology and Immunology 103, Soil Micrology, first term, page 68.		

### SCHOOL OF VETERINARY MEDICINE

<b>First and Second Terms</b>	104	Special Studies in Veterinary Anatomy (ar.) .....	Kitchell, Weber
	137	Problems in Animal Physiology (ar.) .....	Sellers
	157	Veterinary Post-mortem Pathology (ar.) .....	Sautter, Kernkamp
	158	Veterinary Surgical Pathology (ar.) .....	Sautter, Kernkamp
	201	Advanced Animal and Poultry Pathology (ar.) .....	Fenstermacher
	205	Advanced Animal Bacteriology (ar.) .....	Pomeroy, Fenstermacher
	209	Advanced Clinical Techniques (ar.) .....	Staff
	213	Veterinary Obstetrics and Gynecology (ar.) .....	Bartlett
	230	Research (ar.) .....	Staff

\* See page 67 for additional second term courses given at Lake Itasca Biological Station; also page 41.

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

## BIOLOGICAL STATION

### Second Term

#### BOTANY

112	Aquatic Flowering Plants (4)	Fasset
116	Summer Flora of Minnesota (4)	Fasset
131	Field Ecology (4)	Lawrence
136	Organisms and Microclimate (4)	Lawrence
155	Fresh-water Algae (4)	Evans
157	Bryophytes and Pteridophytes (4)	Evans
196	Problems (1-5)	Staff

#### ENTOMOLOGY AND ECONOMIC ZOOLOGY

59	Field Entomology (4)	Peterson
124	Biology of the Immature Insects (4)	Peterson
162	Ecology of Terrestrial Vertebrates (4)	Marshall
196	Special Problems in Entomology and Economic Zoology (ar.)	Peterson, Marshall

#### PLANT PATHOLOGY AND BOTANY

56	Introduction to the Study of Fungi (4)	C. M. Christensen
156	Advanced Study of Fungi (4)	C. M. Christensen
210	Special Problems in Mycology (ar.)	C. M. Christensen

#### ZOOLOGY

55	Natural History of Vertebrates and Fishes (4)	Eddy
115	Advanced Natural History of Vertebrates and Fishes (4)	Eddy
119	Limnology (4)	Eddy
143	Animal Parasites (4)	Chandler
198	Problems (ar.)	Ar.

## MEDICAL SCHOOL

### ANATOMY

First Term	100-101	Gross Human Anatomy (8)	Boyden
	104	Human Histology (4)	Williams
	111	Human Neurology (6)	Larsell, Hartmann
	150	Special Topics in Neurology (ar.)	Larsell
	156	Advanced Anatomy (ar.)	Staff
	164	Segmental Anatomy of Lungs (2)	Boyden
	204	Research in Anatomy (ar.)	Staff
Second Term	58	Anatomy of the Extremities (5)	Wells, Kane
	100-101	Gross Human Anatomy (8)	Wells, Kane
	156	Advanced Anatomy (ar.)	Wells, Sundberg
	165	Hematology (4)	Sundberg
	204	Research in Anatomy (ar.)	Wells, Sundberg

## BACTERIOLOGY AND IMMUNOLOGY

<b>First Term</b>	53	General Bacteriology (5)	Johansson, Lichstein
	103	Soil Microbiology (4)	Schmidt
	123	Bacterial Metabolism (3)	Lichstein
	201	Research (ar.)	Syverton, Lichstein
<b>Second Term</b>	102	Medical Bacteriology (5)	Watson, Roth
	112	General Mycology (3)	Roth
	201	Research (ar.)	Syverton, Watson

## MEDICINE

<b>First Term</b>	104	Introduction to Internal Medicine (6)	Spink, Chapman
	111	Junior Medicine Clerkship (6)	Evans, Spink, Chapman
	112	Senior Medicine Clerkship (6)	Spink, Chapman
	124	Dermatology Clerkship (2)	Laymon and staff
	140	Externship in Medicine (3)	Spink, Chapman
	167	Externship in Dermatology (1)	Laymon and staff
	201	Clinical Medicine (ar.)	Spink, Chapman
	203	Research in Medicine (ar.)	Spink, Chapman
	225	Clinical Dermatology and Syphilology (ar.)	Laymon and staff
	226	Research in Dermatology and Syphilology (ar.)	Laymon and staff
	235	Advanced Clinical Laboratory Medicine (ar.)	Evans and staff
	236	Research on Clinical Laboratory Problems (ar.)	Evans and staff
	<b>Second Term</b>	140	Externship in Medicine (3)
167		Externship in Dermatology (1)	Laymon and staff
201		Clinical Medicine (ar.)	Watson, Hoffbauer
203		Research in Medicine (ar.)	Watson, Hoffbauer
225		Clinical Dermatology and Syphilology (ar.)	Laymon and staff
226		Research in Dermatology and Syphilology (ar.)	Laymon and staff

## OBSTETRICS AND GYNECOLOGY

<b>First Term</b>	201	Advanced Obstetrics and Gynecology, Part I (ar.)	McKelvey and staff
	205	Advanced Obstetrics and Gynecology, Part II (ar.)	McKelvey and staff
	209	Advanced Obstetrics and Gynecology, Part III (ar.)	McKelvey and staff
	216	Research (ar.)	McKelvey and staff
	301	Externship (6)	McKelvey and staff
	<b>Second Term</b>	204	Advanced Obstetrics and Gynecology, Part I (ar.)
208		Advanced Obstetrics and Gynecology, Part II (ar.)	Holly, Kaiser, Seibel, and staff
212		Advanced Obstetrics and Gynecology, Part III (ar.)	Holly, Kaiser, Seibel, and staff
219		Research (ar.)	Holly, Kaiser, Seibel, and staff
302		Externship (6)	Holly, Kaiser, Seibel, and staff

## PATHOLOGY

<b>First Term</b>	104	Autopsies (ar.)	Dawson, McCartney
	106	Diseases of the Heart (2½)	McCartney
	111	Conference on Autopsies (1)	Dawson

	112	Diagnosis of Tumors (2½) .....	McCartney
	113	Surgical Pathology (2½) .....	McCartney
	120	Diseases of the Lungs (1) .....	Dawson
	201	Research (ar.) .....	Dawson, McCartney
<b>Second Term</b>	104	Autopsies (ar.) .....	Dawson, Hebbel
	111	Conference on Autopsies (1) .....	Dawson, Hebbel
	112	Diagnosis of Tumors (2½) .....	Hebbel
	113	Surgical Pathology (2½) .....	Hebbel
	121	Diseases of Alimentary Tract (1) .....	Hebbel
	201	Research (ar.) .....	Dawson, Hebbel

## PEDIATRICS

<b>First Term</b>	124	Junior Clinical Clerkship (6) .....	McQuarrie and staff
	135	Senior Clinical Clerkship (3) .....	McQuarrie and staff
	152	Fundamental Principles of Nutrition and Metabolism (1) .....	McQuarrie, Ziegler, Ulstrom
	154	Endocrinology as Applied to Pediatrics (1) .....	McQuarrie, Ulstrom
	162	Common Behavior Disturbances in Childhood (1) .....	Jensen, Quast, Wallinga
	170	Rheumatic Infection and Heart Diseases in Childhood (1) .....	Thomas, Dwan, Anderson, Good, Denny
	174A	Dispensary Externship in Pediatrics (4) .....	McQuarrie and staff
	174B	In-Patient Externship in Pediatrics (4) .....	McQuarrie and staff
	200	Graduate Seminar in Pediatrics (1½) .....	McQuarrie and senior staff
	202	Pediatric Clinic, Out-Patient Department (5) .....	McQuarrie and staff
	204	Three-Month Residency in Pediatrics (7) .....	McQuarrie and staff
<b>Second Term</b>	135	Senior Clinical Clerkship (3) .....	McQuarrie and staff
	152	Fundamental Principles of Nutrition and Metabolism (1) .....	McQuarrie, Ziegler, Ulstrom
	154	Endocrinology as Applied to Pediatrics (1) .....	McQuarrie, Ulstrom
	162	Common Behavior Disturbances in Childhood (1) .....	Jensen, Quast, Wallinga
	170	Rheumatic Infection and Heart Diseases in Childhood (1) .....	Thomas, Dwan, Anderson, Good, Denny
	174A	Dispensary Externship in Pediatrics (4) .....	McQuarrie and staff
	174B	In-Patient Externship in Pediatrics (4) .....	McQuarrie and staff
	200	Graduate Seminar in Pediatrics (1½) .....	McQuarrie and senior staff
	202	Pediatric Clinic, Out-Patient Department (5) .....	McQuarrie and staff
	204	Three-Month Residency in Pediatrics (7) .....	McQuarrie and staff

## PHARMACOLOGY

<b>First Term</b>	9	Pharmacology for Nurses (1) .....	Cranston and assistants
	102	Pharmacology for Medical Students (3) .....	Bieter, Wright, and staff
	110	Toxicology (ar.) .....	Wright
	203	Research in Pharmacology (ar.) .....	Bieter, Wright, Cranston
<b>Second Term</b>	9	Pharmacology for Nurses (1) .....	Roth
	203	Research in Pharmacology (ar.) .....	Bieter

## PHYSIOLOGICAL CHEMISTRY

<b>First Term</b>	100	Physiological Chemistry (7) .....	Armstrong, Barnum, Carr
	153	Problems in Physiological Chemistry (ar.) .....	Armstrong, Barnum
	205	Research in Physiological Chemistry (ar.) .....	Armstrong, Barnum

<b>Second Term</b>	101	Physiological Chemistry (6)	Glick, Cohen, Carr
	153	Problems in Physiological Chemistry (ar.)	Glick, Cohen
	205	Research in Physiological Chemistry (ar.)	Glick, Cohen

### PHYSIOLOGY

<b>First Term</b>	4	Human Physiology (4)	King
	107	Human Physiology (5)	Visscher, Lifson, Brown, Grim
	203	Research in Physiology (ar.)	Visscher, Lifson, King, Brown
<b>Second Term</b>	60	Human Physiology (6)	Ar.
	203	Research in Physiology (ar.)	Ar.

### PSYCHIATRY AND NEUROLOGY

<b>First Term</b>	103	Junior Clinical Clerkship in Psychiatry and Neurology (6)	Baker, Hastings, Hathaway
	120	Psychosomatics (1)	Hastings
	145	Reading in Psychiatry (ar.)	Hastings
	145x	Reading in Neurology (ar.)	Baker
	208	Clinical Neurology (4)	Baker
	208x	Clinical Psychiatry (8)	Hastings, Hathaway
	208y	Clinical Child Psychiatry (8)	Jensen
	209	Research in Psychiatry and Neurology (ar.)	Baker
	212	Survey of Neuropathology (1)	Baker, Tichy
	221	Psychometric Clerkship (2)	Hathaway
	226	X-ray Conference (1)	Baker
	228	Research in Neuropathology (1)	Baker, Tichy
	231	Applied Electroencephalography (1)	Baker
	233	Applied Neuropathology (1)	Baker, Tichy
	243	Prolonged Psychotherapy (1)	Hastings
	244	Seminar in Psychosomatics (1)	Aldrich
	245	Case Conference for Psychologists (1)	Hathaway
<b>Second Term</b>	145	Reading in Psychiatry (ar.)	Schiele
	145x	Reading in Neurology (ar.)	Baker and staff
	152	Externship in Psychiatry (6)	Schiele and staff
	153	Externship in Neurology (6)	Baker and staff
	208	Clinical Neurology (4)	Baker and staff
	208x	Clinical Psychiatry (8)	Schiele, Schofield
	208y	Clinical Child Psychiatry (8)	Jensen
	209	Research in Psychiatry and Neurology (ar.)	Staff
	212	Survey of Neuropathology (1)	Tichy
	221	Psychometric Clerkship (2)	Schofield
	226	X-ray Conference (1)	Baker and staff
	228	Research in Neuropathology (1)	Tichy
	231	Applied Electroencephalography (1)	Baker and staff
	233	Applied Neuropathology (1)	Tichy
	243	Prolonged Psychotherapy (1)	Schiele
	244	Seminar in Psychosomatics (1)	Aldrich
	245	Case Conference for Psychologists (1)	Schofield

### PHYSICAL MEDICINE

<b>First Term</b>	103	Physical Therapy Clinic (1)	Kottke, Kubicek
	200	Physical Medicine Service (3)	Kottke and staff
	203	Poliomyelitis Clinic (1)	Kottke and staff
	204	Peripheral Vascular Disease Clinic (1)	Kottke and staff
	210	Research in Physical Medicine (3)	Kottke, Kubicek

<b>Second Term</b>	103	Physical Therapy Clinic (1)	Kubicek
	200	Physical Medicine Service (3)	Kubicek and staff
	203	Poliomyelitis Clinic (1)	Kubicek and staff
	204	Peripheral Vascular Disease Clinic (1)	Kubicek
	210	Research in Physical Medicine (3)	Kottke, Kubicek

## RADIOLOGY

<b>First Term</b>	111	Medical Roentgenologic Conference (1)	Rigler
	121	Roentgen Diagnosis and Radium Therapy Lectures for Junior Medical Students (1)	Rigler, Stenstrom
	124	Pediatric Roentgenologic Conference (1)	Rigler
	135c	Surgical Roentgenologic Conference (1)	Rigler and staff
	163a	Neurosurgical Roentgenologic Conference (1)	Peterson
	200	Research in Roentgenology (ar.)	Rigler
	204	Research in Radiation Therapy (ar.)	Stenstrom
	206	Roentgenoscopy (3)	Rigler
	207	Roentgen and Radium Therapy (3)	Stenstrom
	209	Roentgen Diagnosis (6)	Rigler
	210	Roentgen Technique (2)	Rigler
	238	Surgical-Pathology Radiology Conference (1)	Rigler
	240	Conference in Radiation Therapy (1)	Stenstrom
<b>Second Term</b>	109	Externship in Roentgen Diagnosis and Radiation Therapy (3)	Rigler, Stenstrom, and staff
	111	Medical Roentgenologic Conference (1)	Rigler
	124	Pediatric Roentgenologic Conference (1)	Rigler
	135c	Surgical Roentgenologic Conference (1)	Rigler and staff
	163a	Neurosurgery Roentgenologic Conference (1)	Peterson
	200	Research in Roentgenology (ar.)	Rigler
	204	Research in Radiation Therapy (ar.)	Stenstrom
	206	Roentgenoscopy (3)	Rigler
	207	Roentgen and Radiation Therapy (3)	Stenstrom
	209	Roentgen Diagnosis (6)	Rigler
	210	Roentgen Technique (2)	Rigler
	238	Surgical-Pathology Radiology Conference (1)	Rigler
	240	Conference in Radiation Therapy (1)	Stenstrom

## SURGERY

<b>First Term</b>	121	Principles of Surgery (3)	Creevy, Bernstein, Peyton, Varco
	135	Junior Clinical Clerkship (6)	Wangensteen, Varco, Leven, Rice, Bernstein
	135g	Applied Surgical Anatomy (3)	Rice
	152	Problems in Clinical Investigation (ar.)	Cross, Kelly, Varco
	167	Problems in Experimental Surgery (ar.)	Creevy, Cross, Kelly
	216	Surgical Research (ar.)	Ar.
	250	Urological Surgery (ar.)	Creevy
	252	Urological Conference (ar.)	Creevy
	253	Research in Urology (ar.)	Creevy
<b>Second Term</b>	152	Problems in Clinical Investigation (ar.)	Wangensteen, Varco, Lillehei
	167	Problems in Experimental Surgery (ar.)	Wangensteen, Varco, Lillehei
	200	Out-Patient Clinic in Surgery (ar.)	Wangensteen, Varco, Lillehei

211	Operative Surgery (ar.)	Wangensteen, Varco, Lillehei, and staff
214	Surgical Ward Conference (ar.)	Wangensteen, Varco, Lillehei
215	Roentgenological-Surgery Conference (ar.)	Wangensteen, Varco, Lillehei, and staff
216	Surgical Research (ar.)	Wangensteen, Varco, Lillehei
218	Medical-Surgical Pathology Conference (ar.)	Wangensteen, Varco, Lillehei, and staff

## SCHOOL OF PUBLIC HEALTH

First Term	50	Personal and Community Health (3)	Bates
	60	Tuberculosis and Its Control (2)	Myers
	62	Principles of Public Health Nursing I (5)	Sandve
	65	Field Work in Public Health Nursing (ar.)	Sandve
	100	Elements of Preventive Medicine and Public Health (Medics) (6)	Anderson, Thomson
	100	Elements of Preventive Medicine and Public Health (Nurses) (5)	Thomson
	125	Community Health Education Programs (3)	Ar.
	147	Workshop in Mental Hygiene Aspects of Nursing in Health Programs for Younger Children (3)	Von Bergen, Cline, and others

See also Ed. 81, Introduction to Education for Public Health Nurses, College of Education, page 78.

Second Term	59	Health of the School Child (3)	Todd
	63	Principles of Public Health Nursing II (5)	Sandve
	65	Field Work in Public Health Nursing (ar.)	Field
	69	Nursing in Health Programs for School-Age Children (3)	Field
	104	Epidemiology (3)	Anderson
	133	Mental Hygiene (3)	Cline
	140	Vital Statistics (3)	Elveback
	146	Workshop for Field Teachers in Public Health Nursing (3)	Ar.
170	Supervision in Public Health Nursing (3)	Ar.	

### BIOSTATISTICS

110	Biometric Principles (3)	Johnson
111	Biostatistics Laboratory (2)	Elveback, Johnson

## SCHOOL OF NURSING†

First Term	Nursing 103	The Role of Nursing in Cancer Care and Control (3)	Hanson
	Nursing 180	Human Relations in the Health Field (3)	Simmons
	Nurs.Ad.160	Ward Administration (5)	Harris
	Nurs.Ad.170	The Administrative Process in Nursing Service Administration (3)	Florentine
	Nurs.Ad.193	Principles of Administration Applied to Nursing Service Administration (3)	Florentine
	Nurs.Ad.197	Problems in Nursing Service Administration (1)	Florentine
	Nurs.Ed.72	Application of Principles of Learning to Clinical Instruction (3)	Boyle, Norris
	Nurs.Ed.190	The Survey in Nursing Education (3)	Harrington

† See also Ed.T.51A, The Teaching of Nursing, College of Education, page 78.

Second Term	Nursing 68	Nursing Care of Psychiatric Patients (4)	Linehan
	Nurs.Ad.193	Principles of Administration Applied to Nursing	
		Service Administration (2)	Florentine

## SCHOOL OF DENTISTRY

See page 42.

## COLLEGE OF EDUCATION

### AGRICULTURAL EDUCATION

First Term	Agr.Ed.82	Methods in Teaching Agriculture (3)	Kitts
	Agr.Ed.105	Future Farmers of America Program of Work (3)	Swanson
	Agr.Ed.137	Adult Education in Agriculture (3)	Kitts
	Agr.Ed.154	Rural Education and Community Leadership (3)	Swanson
	Agr.Ed.165	Techniques of Instruction in Mechanized Farming (3)	Ar.
	Agr.Ed.168	Techniques of Instruction in Soil and Water Management (3)	Ar.
Agr.Ed.221	Field Problems (3)	Peterson, Kitts, Swanson	
Agr.Ed.232	Research in Agricultural Education (3-9)	Peterson, Kitts, Swanson	
Second Term	Agr.Ed.91	Supervised Teaching Experience (6)	Kitts, Swanson
	Agr.Ed.221	Field Problems (3)	Peterson, Kitts, Swanson
	Agr.Ed.232	Research in Agricultural Education (3-9)	Peterson, Kitts, Swanson

### ART EDUCATION

First Term	Art Ed.18	Design Activities for Elementary Education (3)	Hastie
	Art Ed.184	Advanced Course in the Teaching and Supervision of Art in the Elementary School (3)	Gayne
	Art Ed.189	Application of Esthetic Theory in Education (3)	Hastie
	Art Ed.284	Research in Art Education (3)	Gayne
	Art Ed.295	Problems in Art Education (ar.)	Gayne
Art Ed.296	Seminar in Art Education (0)	Gayne, Hastie	
Second Term	Art Ed.84	Teaching Art in the Elementary School (3)	Gayne
	Art Ed.295	Problems in Art Education (ar.)	Gayne

### CURRICULUM AND INSTRUCTION

First Term	GENERAL COURSES		
	Ed.C.I.101	Driver Education (2)	Neal, Shields
	Ed.C.I.105	Audio-Visual Materials in Education (3)	Pearson
	Ed.C.I.109	Audio-Visual Materials and Equipment Laboratory (3)	Pearson
	Ed.C.I.112	Materials and Procedures in Marriage and Family Life Education (3)	Dyer
	Ed.C.I.129	Principles and Problems of Teaching Social Hygiene (3)	Pearce, Ferguson
	Ed.C.I.133	Consumer Education in the Schools (3)	Price

Ed.C.I.145	Reading Difficulties (3)	Carlson, Reynolds
Ed.C.I.174-175-176	Clinical Methods and Practice in Speech Pathology (3 each)	Bryngelson
Ed.C.I.205	Problems in Audio-Visual Education (ar.)	Pearson
Ed.C.I.212	Family Life Workshop (July 6-24) (4)	Dyer, Hill, and consultants
Ed.C.I.271	Problems in Curriculum Construction (ar.)	Boeck, Goossen, Burton
Ed.C.I.273	Problems in Reading (ar.)	Bond

#### ELEMENTARY EDUCATION

Ed.C.I.102	Teaching the Social Studies in the Elementary School (3)	Chase
Ed.C.I.103	Teaching of Science in the Elementary School (3)	Boeck
Ed.C.I.119	Elementary School Curriculum (2 sec.) (3)	Jarolimek, Goossen
Ed.C.I.123	Speech in the Elementary School (3)	Henrikson
Ed.C.I.143	Teaching and Supervision of Reading in the Elementary School (3)	Bond
Ed.C.I.149	Teaching and Supervision of Arithmetic in the Elementary School (3)	Curtis
Ed.C.I.150	Supervision and Improvement of Instruction (3)	Goossen
Ed.C.I.153	Supervision and Teaching of English in the Elementary School (3)	Chase
Ed.C.I.162	Laboratory in Nursery School and Kindergarten Instructional Practices (3)	Fuller
Ed.C.I.163	Plastic Materials, Story Telling, and Social Studies for Young Children (3)	Headley
Ed.C.I.186	Laboratory in Elementary Instructional Practices (2)	Staudenmaier
Ed.C.I.261	Special Problems in the Improvement of Instruction (ar.)	Goossen

#### SECONDARY EDUCATION

Ed.C.I.113	High School Curriculum (3)	Gwynn
Ed.C.I.122	Literature for Adolescents (3)	D. V. Smith
Ed.C.I.125	Occupational Information Laboratory (3)	Borow
Ed.C.I.135	Group Procedures in Guidance (3)	K. Hoyt
Ed.C.I.136	Business and Distributive Education Under the Vocational Acts (3)	Hager
Ed.C.I.137B	Advanced Materials and Methods in Cooperative Part-Time Classes (3)	Meyer
Ed.C.I.140	Teaching of Speech (3)	D. K. Smith
Ed.C.I.141	Cooperative Part-Time Work Experience Programs (3)	Meyer
Ed.C.I.144	Teaching of Reading in Secondary Schools (3)	Kegler
Ed.C.I.158	Materials and Methods in Office and Clerical Practice (3)	Ar.
Ed.C.I.161	Curriculum Construction in Business Education (3)	Price
Ed.C.I.168	Current Developments in the Social Studies (3)	McCune
Ed.C.I.171	Curriculum Laboratory Practice (for Minneapolis teachers, Communication Curriculum) (6)	Bond, Burton, L. Cook

Ed.C.I.173B	Organizing Units of Instruction in the Secondary School (3)	Gwynn
Ed.C.I.199E	Internship (ar.)	Fitzgerald
Ed.C.I.201	Problems in Teaching the Social Studies (ar.)	McCune
Ed.C.I.225	Special Problems in Supervision of Instruction in Secondary Schools (ar.)	Boardman
Ed.C.I.238	Problems in Distributive Education (ar.)	Meyer
Ed.C.I.239	Problems in Business Education (ar.)	Price
Ed.C.I.266	Supervision of High School Instruction (3)	Boardman
Ed.C.I.270	Improvement of Instruction in the Secondary School (June 15-July 1) (4)	Ar.
Ed.C.I.287	Advanced Course in the Teaching of Science (3)	Boeck
Ed.C.I.294	Advanced Course in Methods of Teaching English (3)	D. V. Smith
Ed.C.I.296	Special Problems in Teaching English (ar.)	D. V. Smith

#### HIGHER EDUCATION

Ed.C.I.228	Workshop: Problems of Higher Education and Teacher Education (June 15-July 10) (6)	Cooper, Eckert, Furrow, Stecklein, and consultants
Ed.C.I.250	Higher Education in the United States (3)	Eckert
Ed.C.I.252	Effective College Teaching (3)	McCune

#### Second Term

#### GENERAL COURSES

Ed.C.I.105	Audio-Visual Materials in Education (3)	Pearson
Ed.C.I.106	Coordinating an Audio-Visual Education Program (3)	Pearson
Ed.C.I.107	Radio in Education (3)	Tyler
Ed.C.I.133	Consumer Education in the Schools (3)	Price
Ed.C.I.145	Reading Difficulties (3)	Reynolds
Ed.C.I.205	Problems in Audio-Visual Education (ar.)	Pearson
Ed.C.I.207	Problems in Radio Education (1-3)	Tyler
Ed.C.I.271	Problems in Curriculum Construction (ar.)	Goossen
Ed.C.I.273	Problems in Reading (ar.)	Reynolds, Tinker

#### ELEMENTARY EDUCATION

Ed.C.I.102	Teaching the Social Studies in the Elementary School (3)	Jarolimek
Ed.C.I.103	Teaching of Science in the Elementary School (3)	Boeck
Ed.C.I.119	Elementary School Curriculum (3)	Goossen
Ed.C.I.143	Teaching and Supervision of Reading in the Elementary School (3)	Tinker
Ed.C.I.149	Teaching and Supervision of Arithmetic in the Elementary School (3)	Brueckner
Ed.C.I.150	Supervision and Improvement of Instruction (3)	Brueckner
Ed.C.I.261	Special Problems in the Improvement of Instruction (ar.)	Brueckner, Goossen

#### SECONDARY EDUCATION

Ed.C.I.113	High School Curriculum (3)	Gwynn
Ed.C.I.134	Materials and Methods in Consumer Education (3)	Price
Ed.C.I.135	Group Procedures in Guidance (3)	K. Hoyt
Ed.C.I.138	Training Store and Office Supervisors (3)	Meyer
Ed.C.I.139	Coordination Techniques (3)	Meyer
Ed.C.I.144	Teaching of Reading in Secondary Schools (3)	Tinker
Ed.C.I.155	Materials Laboratory for Social Studies Teachers (3)	McCune
Ed.C.I.168	Current Developments in the Social Studies (3)	McCune

Ed.C.I.170B	Curriculum and Course of Study Construction (3)	Gwynn
Ed.C.I.201	Problems in Teaching the Social Studies (ar.)	McCune
Ed.C.I.225	Special Problems in Supervision of Instruction in Secondary Schools (ar.)	Boardman
Ed.C.I.238	Problems in Distributive Education (ar.)	Meyer
Ed.C.I.239	Problems in Business Education (ar.)	Price
Ed.C.I.266	Supervision of High School Instruction (3)	Boardman

HIGHER EDUCATION

Ed.C.I.228	Workshop: Problems of Higher Education and Teacher Education (July 27-August 21) (6)	Grim, Jacobs, Mork, Potthoff, and consultants
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EDUCATIONAL ADMINISTRATION

First Term

GENERAL COURSES

Ed.Ad.124	Public School Administration (3)	Davidson
Ed.Ad.210	Financial Aspects of Public School Business Administration (3)	Swenson
Ed.Ad.225	Pupil Personnel Administration (3)	Cramer
Ed.Ad.226	School Plant Planning and Management (3)	Friswold
Ed.Ad.227	Teacher and Employee Administration (3)	Swenson
Ed.Ad.228	Special Problems in Educational Administration (1-3)	Neale
Ed.Ad.229	Problems in Planning School Buildings (June 15-July 1) (4)	Friswold, Hammel
Ed.Ad.230	Public Relations for Schools (3)	Davidson
Ed.Ad.234	Problems in State School Administration (July 2-18) (4)	Schweickhard, Berning, and ar.
Ed.Ad.235	Seminar in Educational Administration (0)	Neale
Ed.Ad.236	Field Studies in Educational Administration (0)	Neale

ELEMENTARY EDUCATION

Ed.Ad.115	Organization of the Elementary School (3)	Cramer
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SECONDARY EDUCATION

Ed.Ad.133	Basic Procedures in Student Personnel Work (3)	
	Section 1 (for administrators)	Estensen
	Section 2 (for counselors-teachers)	Borow
Ed.Ad.218	Recent Literature in Secondary Education (ar.)	Boardman, R. Keller
Ed.Ad.263	Organization of the Secondary School (3)	Fisher
Ed.Ad.264	Administration of Instructional Activities in the Secondary School (3)	Fisher
Ed.Ad.270	Special Problems in Secondary Education (ar.)	Boardman, R. Keller

HIGHER EDUCATION

Ed.Ad.274	The Junior College (3)	R. Keller
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Second Term

GENERAL COURSES

Ed.Ad.124	Public School Administration (3)	Davidson
Ed.Ad.210	Financial Aspects of Public School Business Administration (3)	Kearney
Ed.Ad.225	Pupil Personnel Administration (3)	Cramer
Ed.Ad.226	School Plant Planning and Management (3)	Williams
Ed.Ad.227	Teacher and Employee Administration (3)	Kearney

Ed.Ad.228	Special Problems in Educational Administration (1-3)	Neale
Ed.Ad.230	Public Relations for Schools (3)	Davidson
Ed.Ad.235	Seminar in Educational Administration (0)	Neale

#### ELEMENTARY EDUCATION

Ed.Ad.115	Organization of the Elementary School (3)	Cramer
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#### SECONDARY EDUCATION

Ed.Ad.133	Basic Procedures in Student Personnel Work (3)	Borow
Ed.Ad.218	Recent Literature in Secondary Education (ar.)	Boardman
Ed.Ad.264	Administration of Instructional Activities in the Secondary School (3)	Mitchell
Ed.Ad.265	Administration of Noninstructional Activities in the Secondary School (3)	R. Keller
Ed.Ad.270	Special Problems in Secondary Education (ar.)	Boardman, R. Keller

#### EDUCATIONAL PSYCHOLOGY

##### First Term

##### GENERAL COURSES

Ed.Psy.60	Introduction to Measurement and Statistics (3)	C. Hoyt
Ed.Psy.120	Basic Principles of Measurement (3)	C. Hoyt
Ed.Psy.140	Instruments and Techniques of Measurement (3)	Edson
Ed.Psy.148	Clinical Diagnosis of Reading Difficulties (3)	Carlson
Ed.Psy.150	Clinical Practice in Remedial Teaching (3)	Reynolds
Ed.Psy.151	Clinical Practice in Educational Diagnosis (3)	Reynolds, Carlson
Ed.Psy.159	Personality Development and Mental Hygiene (3)	Estensen
Ed.Psy.182	Education of Exceptional Children (3)	Reynolds, Schoenbohn
Ed.Psy.208	Methods in Educational Research (3)	P. Johnson
Ed.Psy.211	Statistical Methods for School Administrators (July 2-18) (4)	Moonan
Ed.Psy.216	Statistical Methods in Education (3)	P. Johnson
Ed.Psy.216a	Statistical Methods in Education Laboratory (2)	Moonan
Ed.Psy.225	Diagnosis as a Phase of Counseling (3)	Wrenn
Ed.Psy.233	Problems in Guidance and Personnel Work (ar.)	Borow, Estensen, Wrenn
Ed.Psy.253	Research Problems (ar.)	P. Johnson, Wrenn, C. Hoyt, Mork, Reynolds
Ed.Psy.293	Psychology of Learning (3)	Mork

#### SECONDARY EDUCATION

Ed.Psy.133	Basic Procedures in Student Personnel Work (3)	
	Section 1 (for administrators)	Estensen
	Section 2 (for counselor-teachers)	Borow
Ed.Psy.134	School Counseling Procedures (3)	K. Hoyt

##### Second Term

##### GENERAL COURSES

Ed.Psy.120	Basic Principles of Measurement (3)	Goossen
Ed.Psy.150	Clinical Practice in Remedial Teaching (3)	Reynolds
Ed.Psy.151	Clinical Practice in Educational Diagnosis (3)	Reynolds
Ed.Psy.159	Personality Development and Mental Hygiene (3)	Wrenn
Ed.Psy.217	Statistical Methods in Education (3)	Moonan
Ed.Psy.217a	Statistical Methods in Education Laboratory (2)	Moonan
Ed.Psy.226	Interviewing Procedures in Counseling (3)	Borow

Ed.Psy.233	Problems in Guidance and Personnel Work (ar.) .....	Borow, Wrenn
Ed.Psy.253	Research Problems (ar.) .....	Wrenn, Reynolds, Mork
Ed.Psy.293	Psychology of Learning (3) .....	Mork

#### SECONDARY EDUCATION

Ed.Psy.133	Basic Procedures in Student Personnel Work (3) .....	Borow
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#### GENERAL EDUCATION

First Term	Ed.81	Introduction to Education for Public Health Nurses (3) .....	Ar.
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#### HISTORY AND PHILOSOPHY OF EDUCATION

First Term	H.Ed.131	Comparative Education (3) .....	Beck
	H.Ed.156	History of Ideas in American Education (3) .....	Ellis
	H.Ed.180	The School and Society (2 sec.) (3) .....	Beck, Ellis
	H.Ed.241	Problems in the History and Philosophy of Education (ar.) .....	Beck, Ellis
Second Term	H.Ed.141	Critical Issues in Contemporary Education (3) .....	Beck
	H.Ed.180	The School and Society (3) .....	Beck
	H.Ed.241	Problems in the History and Philosophy of Education (ar.) .....	Beck

#### HOME ECONOMICS EDUCATION

First Term	H.E.Ed.196E	Workshop: Adult Education in Home Economics (4) .....	Ford
	H.E.Ed.196F	Workshop: Home Experience and Extended Employment (4) .....	Ford
	H.E.Ed.293	Special Problems in Home Economics Education (ar.) .....	Rose
	H.E.Ed.295	Seminar in Home Economics Education (3) .....	Rose

#### INDUSTRIAL EDUCATION

First Term	Ind.100	Industrial Instruction (3) .....	Anderson
	Ind.105	Administration of Industrial Education (3) .....	Smith
	Ind.106	Workshop in Industrial Arts (6) .....	Nelson, McIntosh
	Ind.107	Coordination (3) .....	Widdowson
	Ind.125	Philosophy and Practice in Industrial Education (3) .....	Widdowson
Second Term	Ind.200	Research Problems (3-9) .....	Smith, Nelson
	Ind.102	The General Shop (not a shop course) (3) .....	Nelson
	Ind.103	Instructional Aids (3) .....	Nelson
	Ind.110	Vocational Guidance (3) .....	Smith
	Ind.135	Industrial Course Construction (3) .....	Micheels
Ind.200	Research Problems (3-9) .....	Smith, Micheels	

#### METHODS AND STUDENT TEACHING

First Term	NURSING EDUCATION		
	Ed.T.51A	The Teaching of Nursing (2) .....	Boyle, Norris
	ELEMENTARY EDUCATION		
	Ed.T.77	Student Teaching in the Nursery School (3) .....	Fuller
	Ed.T.78	Student Teaching in the Kindergarten (3) .....	Headley

## SECONDARY EDUCATION

Ed.T.52	Student Teaching (ar.)	Grim
Ed.T.84A- B-C	Practice and Field Work in Recreation Leadership (1 or 2)	Fitzgerald
Ed.T.85A- B-C	Practice and Field Work in Recreation Leadership (1 or 2)	Fitzgerald

## Second Term NURSING EDUCATION

Ed.T.51A	The Teaching of Nursing (2)	Boyle, Norris
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## MUSIC EDUCATION

First Term	Mu.Ed.60- 61-62	Supervision and Teaching of Music (3)	Ivory
	Mu.Ed.115	Instrumental Workshop (3)	Ivory
	Mu.Ed.224	Research Problems (3-9)	Ivory
	Mu.Ed.225E	Advanced Applied Music (2-4)	Ar.
Second Term	Mu.Ed.50A	Teaching Music in Primary Grades (2)	Jung
	Mu.Ed.50B	Teaching Music in Intermediate Grades (2)	Jung
	Mu.Ed.103	Psychological Foundations of Music Education (3)	Jung
	Mu.Ed.150	The Organization and Supervision of Vocal and Instrumental Music in Elementary Schools (3)	Ivory
	Mu.Ed.224	Research Problems (3-9)	Ivory
	Mu.Ed.225E	Advanced Applied Music (2-4)	Ar.

## PHYSICAL EDUCATION FOR MEN

First Term	1B	Sports Education (Beginning and Advanced Golf) (1 ea.)	Bolstad
	6A	Soccer, Speedball, Volleyball (1)	Kulbitski
	7A	Games and Relays (1)	Kulbitski
	7C	Intramural Sports (1)	Kulbitski
	9A	Folk Dancing (1)	Piper
	50	Human Anatomy (3)	Osell
	55	Methods in Physical Education (4)	Piper
	73-74-75	Directed Teaching (2 ea.)	Piper
	101	Principles of Physical Education (3)	Keller
	236	Recent Literature, Research in Physical Education, Recreation (3)	Nordly
	238	Administration of Physical Education in Colleges (3)	Keller
	241	Administration and Supervision of Public Recreation (3)	Fitzgerald
	247	Problems in Health, Physical Education, and Recreation (ar.)	Nordly
	261	Seminar in Physical Education (3)	Nordly
	Second Term	2B	Sports Education (Tennis and Swimming) (1 ea.)
8		Tennis and Golf (1)	Piper, Bolstad
9B		Square and Social Dancing (1)	Piper
51		Mechanics of Movement (3)	Osell
111		Recreation Areas, Facilities (3)	Fitzgerald
121		Principles of Recreation Methods (3)	Fitzgerald

155	Instructional Aids in Health, Physical Education and Recreation (3)	Piper
233	Special Administration Problems in Physical Education in Secondary Schools (3)	Nordly
234	Secondary School and College Curriculum in Physical Education (3)	Nordly

### PHYSICAL EDUCATION FOR WOMEN

<b>First Term</b>	5	Methods of Coaching and Conducting Organized Games for Junior and Senior High Schools (2)	Hauptfuehrer
	18	Elementary Folk Dancing Games and Methods (2)	Lampe
	33	Intermediate Swimming and Methods (2)	Eibner
	37	Individual and Dual Games and Methods (2)	Hauptfuehrer
	85	Remedial Activities in Physical Education (3)	Wilson
	113	Physical Education for the Elementary Schools (3)	Baker
	118	Problems in Teacher Education in Health, Physical Education and Recreation (3)	Staff
	135	Tests and Measurements in Physical Education (3)	Wilson
	224	Research Problems in School Health Education and Physical Education for Women (ar.)	Staff
<b>Second Term</b>	12	Social Recreation—Ballroom and American Country Dance (1)	Ar.
	83	Methods and Materials of School Health Education (3)	Ericson
	84	The Physical Education Program for the Elementary and Secondary Schools (3)	Jaeger
	114	The School Health Education Program (3)	Ericson

### SCHOOL OF BUSINESS ADMINISTRATION (INCLUDING ECONOMICS)

<b>First Term</b>	Econ.3	Elements of Money and Banking (3)	Sutton
	Econ.5	Elements of Statistics (3)	Sauerlender
	Econ.6	Principles of Economics (3)	McKenna
	Econ.24	Principles of Accounting (3)	Nelson
	Econ.50	Insurance Principles (3)	Williams
	B.A.65	Analysis of Financial Statements (3)	Heilman
	Econ.73	Manpower Economics and Labor Problems (3)	Ulman
	B.A.74	Business Statistics (3)	Sauerlender
	Econ.75	Corporation Finance (3)	Stchman
	Econ.80	Intermediate Economic Analysis: Income and Employment (3)	McKenna
	Econ.85	Government Regulation of Business (3)	Wheeler
	Econ.103	Advanced Economic Theory (3)	Boddy
	B.A.112	Time Series Analysis and Quality Control (3)	Sauerlender
	B.A.114	Retail Store Management (3)	Canoyer
	Econ.124	Economic Problems of Today (3)	Smith
	B.A.139	Corporate Statements (3)	Heilman
	B.A.146	Investments (3)	Stchman
	B.A.150	Intermediate Accounting I (3)	Heilman
	B.A.152	Cost Accounting (3)	Wheeler
	Econ.155	The Modern Corporation (3)	Stchman
	B.A.159	Advanced Accounting (3)	Nelson

Econ.161	General Manpower Economics and Labor Problems (3)	Ulman
Econ.162	Labor Movements (3)	Ulman
Econ.165	Current Trends in Industrial Relations (1)	Yoder and ar.
Econ.176	An Introduction to International Economics (3)	Smith
Econ.178	Economics of Consumption (3)	Canoycr
Econ.228	Seminar: Problems in Current Economic Theory (3)	Boddy
Econ.251	Seminar in Industrial Relations (3)	Yoder
B.A.259	Case Studies in Specialized Accounting (3)	Wheeler
<b>Second Term</b>		
Econ.3	Elements of Money and Banking (3)	Borak
Econ.7	Principles of Economics (3)	Ar.
Econ.25	Principles of Accounting (3)	Lund
B.A.58	Elements of Public Finance (3)	Heller
Econ.64	The Economics of Money and Banking (3)	Heller
B.A.66	Managerial Costs (3)	Reighard
Econ.73	Manpower Economics and Labor Problems (3)	Turnbull
B.A.77	Survey in Marketing (3)	Lewis
Econ.81	Intermediate Economic Analysis: Firms and Households (3)	Papandreou
B.A.89	Production Management (3)	Mitton
Econ.104	Advanced Economic Theory (3)	Papandreou
B.A.113	Sales Management (3)	Lewis
B.A.130	Managerial Cost Accounting (3)	Reighard
Econ.142	Monetary and Banking Policy (3)	Heller
Econ.149	Business Cycles (3)	Ar.
B.A.151	Intermediate Accounting II (3)	Lund
B.A.153	Cost Accounting (3)	Reighard
Econ.161	General Manpower Economics and Labor Problems (3)	Turnbull
Econ.164	Labor Legislation: Collective Bargaining (3)	Turnbull
B.A.167	Introduction to Industrial Relations (3)	Heneman
B.A.184	Scientific Management in Industry (3)	Mitton
Econ.185	Economics of Marketing (3)	Lewis
B.A.187	Administration of Production (3)	Mitton
Econ.189	Principles of Public Finance (3)	Heller

## INSTITUTE OF CHILD WELFARE

<b>First Term</b>	40	Child Training (3)	Cummings
	80	Child Psychology (3)	Ar.
	130	Motor, Linguistic, and Intellectual Development of the Child (3)	Brieland
	141	Behavior Problems in Older Children (3)	Ar.
	150	Childhood Education (3)	Fuller
	170	Parent Education (3)	Cummings
	270	Readings and Research in Child Development (ar.)	Staff

See also Courses Ed.C.I. 162 and 163, listed under Curriculum and Instruction, page 74, and Courses Ed.T. 77 and 78, under Methods and Student Teaching, page 78, College of Education.

<b>Second Term</b>	131	Personality, Emotional, and Social Development of the Child (3)	Deno
	132	Later Childhood and Adolescence (3)	Deno
	140	Behavior Problems in Younger Children (3)	Blodgett
	143	Problems of Mental Deficiency (3)	Blodgett
	270	Readings and Research in Child Development (ar.)	Staff

## LIBRARY INSTRUCTION

Special Eight-Week Term: June 15-August 8, 1953

Tuition for 4 credits or less is \$45; for more than 4 credits, \$60. Incidental fee is \$14.

50	Libraries and Society (3)	Shove
53	School Library Management (3-4)	Marfell
61	Library Practice (3)	Sullivan
63	Reference II (3)	Fulmer
70	Reading Guidance (3)	Fulmer
74	Library Materials in the School's Instructional Program (2)	Fitch
81	Bibliographical Description of Library Materials (3)	Wallin
85	Special Problems (3)	Shove, Fitch
152	History of Printing to Modern Times (2)	Shove
157	School Library Problems (3)	Fitch
171	Principles and Problems in Reading Guidance for Children (3)	Fulmer
255	Seminar in Library Administration (3)	Ar.
261	Seminar in Advanced Bibliography (3)	Shove
271	Seminar in Library Work with Children and Young People (3)	Fitch

## GENERAL COLLEGE

First Term	8	Applied Mathematics (3)	Harris
	10A	Human Biology: Fundamental Similarities in the Living World (3)	Cieslak
	10C	Human Biology: Healthful Living (3)	Cieslak
	30E	Literature Today: An Introduction to World Literature (3)	Appel
	31A	Writing Laboratory: Descriptive Writing (3)	McCoy
	44B	Current History (3)	Stout
Second Term	10B	Human Biology: How the Living Machinery in Man Works (3)	Dearden
	31D	Writing Laboratory: Business Writing (3)	Sheldon
	32A	Oral Communication: Basic Principles of Oral Communication (3)	Olson
	37	Social Trends and Problems (3)	Anderson

## DULUTH BRANCH

### DIVISION OF EDUCATION AND PSYCHOLOGY

#### EDUCATION

First Term	Ag.Ed.154	Rural Education and Community Leadership (3)	Dawson
	Ed.61A-81A	School and Society (5)	Staple
	Ed.61C	Curriculum and Methods in Elementary Education (5)	T. Johnson

Ed.Ad.115	Elementary School Organization and Administration (3) .....	Wheat
Ed.Ad.167	The Junior High School (3) .....	Plumb
Ed.C.I.61	Teaching the Social Studies in the Elementary School (3) .....	Staple
Ed.C.I.63	Children's Literature (3) .....	Culkin
Ed.C.I.64	Teaching the Language Arts (5) .....	Urquhart
Ed.C.I.65	Teaching Science in the Elementary School (3) .....	Keith
Ed.C.I.66	Audio-Visual Aids in Teaching (3) .....	Keith
Ed.C.I.101	Driver Education (for teachers) (2) .....	Rickert
Ed.C.I.113	The Curriculum of the Secondary School (3) .....	Plumb
Ed.C.I.117	Rural Education for Administrators and Teachers (3) .....	Dawson
Ed.C.I.119	The Elementary School Curriculum (3) .....	H. C. Johnson
Ed.C.I.135	Group Procedures in Guidance (3) .....	Wood
Ed.C.I.150	Supervision and Improvement of Instruction (3) .....	H. C. Johnson
Ed.C.I.227	Problems in Rural Education (ar.) .....	Dawson
Ed.Mu.51	Teaching Music in the Elementary School (3) .....	T. Johnson
Ed.Psy.116	Statistical Methods in Education (3) .....	Apostolakos
Ed.Psy.158	Psychology of Adolescence (3) .....	Wheat

### Second Term

Ed.48	Orientation to Teaching (1) .....	Plumb
Ed.61B-81B	Educational Psychology (5) .....	Wheat
Ed.Ad.116	The Teacher and Secondary School Administration (3) .....	Wheat
Ed.C.I.67	Remedial Reading (3) .....	Davis
Ed.C.I.118	The Community School (3-6) .....	M. Peterson, King
Ed.C.I.144	The Teaching of Reading in Junior and Senior High Schools (3) .....	Frogner
Ed.C.I.149	The Teaching and Supervision of Arithmetic in the Elementary Schools (3) .....	H. C. Johnson
Ed.C.I.153	Supervision and Teaching of English in the Elementary Schools (3) .....	Frogner
Ed.C.I.169	Extracurricular Activities (3) .....	Wood
Ed.Psy.120	Basic Principles of Measurement (3) .....	H. C. Johnson
Ed.Psy.133	Basic Procedures in Student Personnel Work (3) .....	Plumb
Ed.Psy.159	Personality Adjustments and Mental Hygiene (3) .....	Apostolakos
H.Ed.141	Critical Issues in Contemporary Education (3) .....	Ehlers
H.Ed.179	Critical Thinking for Teachers (3) .....	Ehlers

### HEALTH EDUCATION

First Term	He.Ed.3	Personal Health (2) .....	L. Peterson
	He.Ed.5	First Aid and Safety (1) .....	Graybeal

### HOME ECONOMICS

First Term	H.Ec.5	Selection and Care of Clothing (2) .....	Ar.
	H.Ec.29	Textiles (3) .....	Ar.
	H.Ec.32	Introduction to Nutrition (3) .....	Sheldon
	H.Ec.44	Experience in Food Service (3) .....	Sheldon
	H.Ec.55	Materials and Methods in Clothing Construction (3) .....	Ar.
	H.Ec.87	General Workshop in Home Economics Teaching (3) .....	Palmer
	H.Ec.96	Adult Education in Home Economics (3) .....	Palmer
	H.Ec.97	General Workshop in Home Economics Teaching (3) .....	Palmer

**INDUSTRIAL EDUCATION**

<b>First Term</b>	Ind.103	Instructional Aids (3)	Micheels
	Ind.135	Industrial Course Construction (3)	Micheels

**PHYSICAL EDUCATION FOR MEN**

<b>First Term</b>	Phys.Ed.		
	MW1,2	Archery (1)	L. Peterson
	Phys.Ed.		
	MW1,2	Badminton (1)	Rickert
	Phys.Ed.		
	MW1,2	Golf (1)	Rickert
	Phys.Ed.		
	MW1,2	Recreational Games (1)	Rickert
	Phys.Ed.		
	MW1,2	Tennis (1)	Rickert
	Phys.Ed.		
	M1,2	Swimming (1)	Rickert
	Phys.Ed.		
	M4A-B-C	Football Fundamentals, Basketball Fundamentals, and Baseball Fundamentals (3)	L. Peterson
	Phys.Ed.6C	Swimming (1)	Rickert
	Phys.Ed.55	The Teaching of Physical Education Activities (2)	L. Peterson
	Phys.Ed.		
	M60	Prevention and Care of Injuries (2)	L. Peterson
	Phys.Ed.		
	M66A-B	Officiating Football and Basketball (2)	Rickert
Phys.Ed.			
M67	Coaching Football (2)	L. Peterson	
Phys.Ed.68	Coaching Basketball (2)	L. Peterson	
<b>Second Term</b>	Phys.Ed.		
	MW1,2	Badminton (1)	Rickert
	Phys.Ed.		
	MW1,2	Golf (1)	Rickert
	Phys.Ed.		
	MW1,2	Tennis (1)	Rickert
	Phys.Ed.		
	M60	Prevention and Care of Injuries (2)	Rickert
Phys.Ed.			
M66A-B	Officiating Football and Basketball (2)	Rickert	

**PHYSICAL EDUCATION FOR WOMEN**

<b>First Term</b>	Phys.Ed.		
	MW1,2	Folk and Square Dance (1)	Richards
	Phys.Ed.		
	W4A-B-C	Soccer-Speedball, Basketball, Softball-Volleyball (2)	Richards
	Phys.Ed.9A	Folk Dance (1)	Richards
	Phys.Ed.40	Elementary and Leadup Games (1)	Richards
	Phys.Ed.41	Gymnastics, Stunts, and Tumbling (1)	Richards
	Phys.Ed.42	Folk Dance and Singing Games (1)	Richards
	Phys.Ed.43	The Teaching of Physical Education in the Elementary School (2)	Richards

Phys.Ed.54	Methods and Materials in Physical Education (3)	Graybeal
Phys.Ed.91	Principles of Physical Education (3)	Graybeal
Phys.Ed.101	Principles of Physical Education (3)	Graybeal

## PSYCHOLOGY

<b>First Term</b>	Psy.1	General Psychology (3)	Apostolakos
	Psy.71	Psychology of Personality (3)	Apostolakos
<b>Second Term</b>	Psy.2	General Psychology (3)	Apostolakos
	Psy.73	Elements of Vocational Psychology (3)	Apostolakos

## DIVISION OF HUMANITIES

### ART

<b>First Term</b>	Art 5	Introduction to Art (3)	A. Smith
	Art 23	Lettering and Color (3)	A. Smith
	Art 52	Art in Elementary Education (3)	A. Smith
<b>Second Term</b>	Art 177	Workshop in Advanced Painting (ar.)	Blanch

### ENGLISH

<b>First Term</b>	Eng.22	Introduction to Literature (5)	Glick
	Eng.27	Advanced Writing (3)	Rosenthal
	Eng.39	Twentieth-Century Literature (3)	Rosenthal
	Eng.59	Shakespeare (3)	Rosenthal
	Eng.74	American Literature (3)	Glick
<b>Second Term</b>	Eng.53	World Literature (3)	Tezla
	Eng.57	The Interpretation of Poetry (3)	Tezla
	Eng.64	Romantic Prose and Poetry (3)	Tezla

### FINE ARTS

<b>First Term</b>	F.A.4	Appreciation of the Arts (3)	Miller
<b>Second Term</b>	F.A.5	Appreciation of the Arts (3)	Miller

### LIBRARY SCIENCE

<b>First Term</b>	Lib.Sci.56	Elementary School Library Materials I (4)	S. Anderson
	Lib.Sci.59	Secondary School Library Materials II (4)	S. Anderson

### MUSIC

<b>First Term</b>	Mu.21	Introduction to Music (3)	Miller
<b>Second Term</b>	Mu.21	Introduction to Music (3)	Miller
	Mu.23	The Musical Experience (3)	Miller

### PHILOSOPHY

<b>Second Term</b>	Phil.3A	Ethics (3)	Ehlers
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**SPEECH**

<b>First Term</b>	Sp.1	Fundamentals of Speech (3) .....	Hicks
	Sp.2	Fundamentals of Speech (3) .....	Hicks
	Sp.54	Methods and Use of Discussion (3) .....	Hicks
	Sp.85	Introduction to Speech Disorders (3) .....	Pierce
<b>Second Term</b>	Sp.73	The Dramatics Program in the Elementary and Secondary Schools (3) .....	Hayes

**DIVISION OF SCIENCE AND MATHEMATICS**

**BIOLOGY**

<b>First Term</b>	Bot.72	Flora of Minnesota (3) .....	Lakela
	Nat.Sci.7	General Biology (3) .....	Lakela
	Nat.Sci.10	Conservation of Natural Resources (3) .....	Darland
	Zool.1S	General Zoology (5) .....	Odlaug
	Zool.4M	Human Physiology (4) .....	Odlaug
<b>Second Term</b>	Nat.Sci.8-9	General Biology (7) .....	Keith
	Zool.2S	General Zoology (5) .....	Hofslund
	Zool.57	Ornithology (3) .....	Hofslund

**CHEMISTRY**

<b>First Term</b>	Inorg.Chem.6	General Inorganic (5) .....	Fayle
<b>Second Term</b>	Inorg.Chem.7	General Inorganic (5) .....	Moore

**MATHEMATICS**

<b>First Term</b>	Math.A	Basic Mathematics (3) .....	McEwen
	Math.6	Trigonometry (5) .....	McEwen
<b>Second Term</b>	Astron.1	Elementary Astronomy (3) .....	Lindquist
	Math.A	Basic Mathematics (3) .....	Elwell
	Math.1	Higher Algebra (5) .....	Elwell

**PHYSICS**

<b>First Term</b>	Nat.Sci.4	The Physical World (3) .....	Weinberg
	Nat.Sci.5	The Physical World (3) .....	Cothran
<b>Second Term</b>	Nat.Sci.6	The Physical World (4) .....	Lindquist

**DIVISION OF SOCIAL STUDIES**

**BUSINESS AND ECONOMICS**

<b>First Term</b>	B.&E.1D	Principles of Economics (5) .....	Davidson
	B.&E.2D	Principles of Economics (5) .....	Meyers
	B.&E.31D	Principles of Accounting (3) .....	Dettmann
	B.&E.32D	Principles of Accounting (3) .....	Dettmann
	B.&E.33D	Principles of Accounting (3) .....	Dettmann
	B.&E.66D	Insurance Principles (3) .....	Meyers
	B.&E.81D	Labor Movements and Problems (3) .....	Davidson

	B.&E.99D	Honors and Practice Course in Business and Economics (Economics of Investment) (3)	Wolff
	B.&E.178	Economics of Consumption (3)	Vaile
	B.&E.185	Economics of Marketing (3)	Vaile
<b>Second Term</b>	B.&E.3D	Principles of Economics (5)	Davidson
	B.&E.58D	Foreign Trade (3)	Meyers
	B.&E.82D	Social and Collective Bargaining Legislation (3)	Davidson
	B.&E.85D	Monetary and Banking Policy (3)	Meyers
	B.&E.86D	Public Finance (3)	Meyers

## GEOGRAPHY

<b>First Term</b>	Geog.12	Principles of Geography (5)	Chamberlin
	Geog.20	Weather and Climate (3)	Chamberlin
	Geog.110	South America (3)	Chamberlin
<b>Second Term</b>	Geog.41	Geography of Commercial Production (5)	Chamberlin
	Geog.107	Soviet Union (3)	Chamberlin

## HISTORY

<b>First Term</b>	Hist.1D	History of Western Civilization (3)	Maclear
	Hist.20	American History (3)	Maclear
	Hist.21	American History (3)	M. Lindquist
	Hist.62	The Far East (3)	Maclear
	Hist.68D	American History in the Twentieth Century (3)	M. Lindquist
	Hist.98D	Minnesota and the Northwest (3)	M. Lindquist
	Hist.186D	Minnesota and the Northwest (3)	M. Lindquist
<b>Second Term</b>	Hist.22	American History (3)	Livingston
	Hist.63D	The Far East (3)	Livingston
	Hist.66D	Twentieth-Century Europe (3)	Livingston

## POLITICAL SCIENCE

<b>First Term</b>	Pol.Sci.1	American Government and Politics: National and State (3)	Wolff
	Pol.Sci.25	International Relations (3)	von Glahn
	Pol.Sci.30	American Democracy (3)	von Glahn
	Pol.Sci.51	Government and Conservation (3)	Wolff
	Pol.Sci.166	Development of Political Thought: Early Modern (3)	von Glahn
<b>Second Term</b>	Pol.Sci.2	American Government and Politics: National and State (3)	von Glahn
	Pol.Sci.85	Problems of World Politics (3)	von Glahn
	Pol.Sci.162	Recent Political Thought (3)	von Glahn

## SOCIOLOGY

<b>First Term</b>	Soc.1	Introduction to Sociology (5)	Turbeville
	Soc.49	Social Problems (3)	Turbeville
	Soc.81	Marriage and the Family (3)	Mabry
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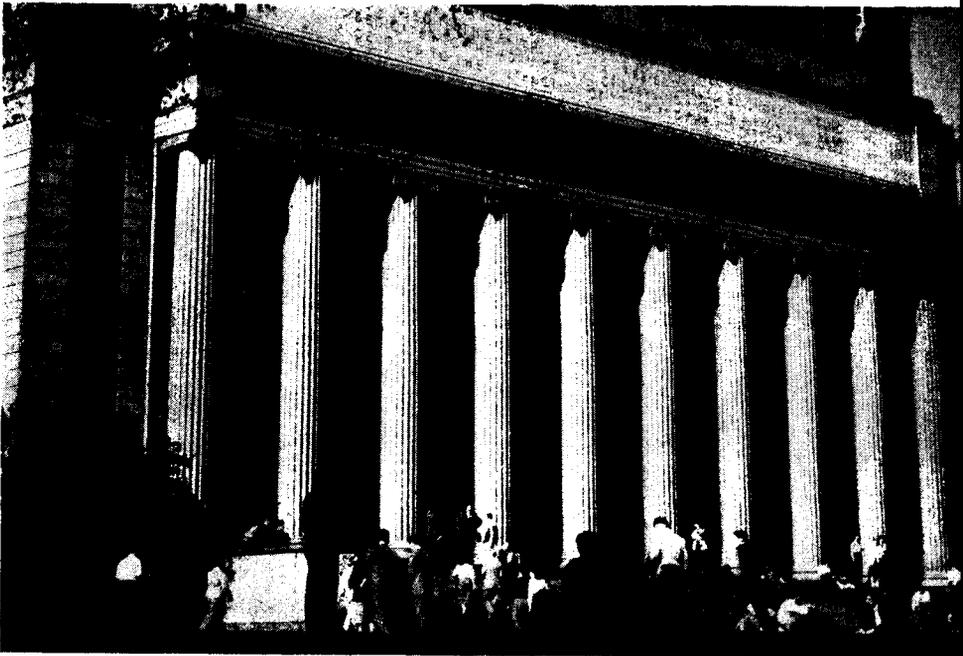
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*Bulletin of the*  
**UNIVERSITY OF MINNESOTA**



*Summer Session 1953*

First term - June 15 to July 18

Second term - July 20 to August 22

# UNIVERSITY OF MINNESOTA

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Volume LVI, Number 11

March 6, 1953

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## CALENDAR

(Except Library Instruction)

June	15	Monday	Registration, first term
June	16	Tuesday	First term classes begin
July	4	Saturday	Independence Day ; holiday
July	16	Thursday	Commencement, 8:00 p.m.
July	18	Saturday	First term closes
July	20	Monday	Registration for second term
July	21	Tuesday	Second term classes begin
August	20	Thursday	Commencement, 8:00 p.m.
August	22	Saturday	Second term closes

## LIBRARY INSTRUCTION

(Eight-week course)

June	15	Monday	Registration
June	16	Tuesday	Term begins
July	4	Saturday	Independence Day ; holiday
August	8	Saturday	Term closes

## CLASS HOUR SCHEDULE

	Minneapolis Campus	St. Paul Campus
I Hour	8:00- 8:50	7:30- 8:20
II Hour	9:00- 9:50	8:30- 9:20
III Hour	10:00-10:50	9:30-10:20
IV Hour	11:00-11:50	10:30-11:20
V Hour	12:00-12:50	11:30-12:20
VI Hour	1:00- 1:50	12:30- 1:20
VII Hour	2:00- 2:50	1:30- 2:20
VIII Hour	3:00- 3:50	2:30- 3:20
IX Hour	4:00- 4:50	3:30- 4:20
X Hour	5:00- 5:50	4:30- 5:20

Convocation, 8:30 p.m., Thursday

(See Official Daily Bulletin for announcement)

No application form need be filed by students with previous college work who plan to attend during the 1953 Summer Session only. See pages 10-18 for further details.

## BUILDING ABBREVIATIONS

A, Armory  
Adm, Administration  
AE, Aeronautical Engineering  
Ag(StP), Agronomy  
AgrBot(StP), Agricultural Botany  
AgLib(StP), Agriculture Library  
AH, Appleby Hall  
Bo, Botany  
Bu, Burton Hall  
C, Chemistry  
CH, Cooke Hall  
ChE, Chemical Engineering  
CofH(StP), Coffey Hall  
DCB(StP), Dairy Cattle Barn  
E, Main Engineering  
EDH, Eddy Hall  
EE, Electrical Engineering  
En(StP), Agricultural Engineering  
Ex, Experimental Engineering  
F, Folwell Hall  
ForH, Ford Hall  
FraH, Fraser Hall  
GH(StP), Green Hall  
Gy(StP), Gymnasium  
HE(StP), Home Economics  
HoB(StP), Home Building  
Hosp, University Hospitals  
Hr(StP), Horticulture  
IA, Institute of Anatomy  
J, Jones Hall  
JobH, Johnston Hall  
Lib, Library  
LsPav(StP), Livestock Pavilion  
MB(StP), Music Building  
ME, Mechanical Engineering  
MeH(StP), Meredith Hall  
MEX, Mines Experiment Station  
MH, Millard Hall  
MNH, Museum of Natural History  
MSh(StP), Meat Shop  
MurH, Murphy Hall  
NGW, Norris Gymnasium for Women  
NH, Nicholson Hall  
NMA, Northrop Memorial Auditorium  
Peik H, New University High School  
Peik G, New University High School  
Gymnasium  
OUHS, Old University High School  
Owre, Owre Hall  
P, Pillsbury Hall  
PetH(StP), Peters Hall  
Ph, Physics  
PoH, Louis M. Powell Hall for Nurses  
PP(StP), Plant Pathology  
Psy, Psychology  
Pt, Pattee Hall  
ScH, Scott Hall  
ShH, Shevlin Hall  
SnH(StP), Snyder Hall  
So(StP), Soils  
TCH, Temporary, Court of Hospitals  
TEH(StP), Temporary, East of Haecker  
TNCE, Temporary, North Court of Engineering  
TNHS, Temporary, North of Health Service  
TNM, Temporary, North of Mines (Appleby Hall)  
TNUH, Temporary, North of University High School  
TSA(StP), Temporary, South of Administration (Coffey Hall)  
TSCE, Temporary, South Court of Engineering  
TSF, Temporary, South of Folwell  
TSH(StP), Temporary, South of Haecker Hall  
TSMa, First Temporary, South of Mines (Appleby Hall)  
TSMb, Second Temporary, South of Mines (Appleby Hall)  
TSMc, Third Temporary, South of Mines (Appleby Hall)  
TSP, Temporary, South of Powell Hall  
TWH, Temporary, West of Hospitals  
VCHH, Variety Club Heart Hospital  
VetA(StP), Veterinary Anatomy  
VetC(StP), Veterinary Clinic  
VetS(StP), Veterinary Science  
VH, Vincent Hall  
WeH, Wesbrook Hall  
WuH, Wulling Hall  
Z, Zoology

## 1953 SUMMER SESSION

During the academic year the University is on the quarter system. Work equivalent to that taken in one quarter of the academic year may be taken in the Summer Session but for convenience the Summer Session is divided into two terms.

Most of the University's regular staff of scholars are present in the Summer Session.

### Duluth Branch

The Duluth Branch of the University of Minnesota is primarily an undergraduate institution, but it offers a number of *graduate* courses in professional education and in several subject-matter areas during both terms of the Summer Session. Its campus overlooks Lake Superior in Duluth, Minnesota, and has the advantages of the cool North Shore climate. The curricula include preprofessional, teacher-education, and four-year academic programs. Dates of the session and tuition are the same as for the University of Minnesota in the Twin Cities.

The fifth annual summer workshop in painting, featuring another eminent American artist, is planned. Special activities also are scheduled in home economics and rural education. Special attention is paid to the problems of teachers who wish to complete work for the bachelor of science degree.

For bulletin and detailed information concerning this branch, write to the Office of Personnel Services, University of Minnesota, Duluth Branch, Duluth 5.

### SPECIAL FEATURES

The following special programs have been planned to highlight the varied and rich curriculum offered:

#### Workshop in High School Dramatics

A feature of the first term will be a Workshop in High School Dramatics designed to fit the needs of both high school teachers and a limited number of outstanding high school students.

The program for high school students includes lectures by the director and staff of the University Theatre, reading and acting of scenes from great plays, improvisations of scenes and skits, a technical workshop, and rehearsal of one-act plays. Students will also have an opportunity to appear in a major University Theatre production, probably *I Remember Mama*.

High school students accepted for the workshop must be able to make satisfactory arrangements regarding living quarters; the Theatre can assume no responsibility for them outside of workshop hours.

Regular Summer Session students will select courses from the University Theatre curriculum and other related fields.

#### Family Life Workshop

Through the cooperation of several departments, a Family Life Workshop (Ed.C.I. 212) will be offered from July 6 to 24 for teachers, administrators, counselors, social workers, research workers, and others actively engaged in family life education. Dr. Reuben Hill and other national leaders offer a synthesis of advanced practice at the graduate level.

#### Economic Problems of Today

A special survey course on current economic problems (Econ. 124, Economic Problems of Today), planned for the nonmajor, will be of particular interest to

teachers who wish to be brought up to date in the teaching of social studies. This is a logical sequence to the workshops in economic education held on the campus in recent years.

### Language Arts

The outstanding program in the Language Arts . . . reading, speaking, writing, listening, children's theater, and children's literature . . . in the College of Education, courses which were so valuable to many teachers last summer, will be repeated during the first term.

An Institute at the Center for Continuation Study from June 29 through July 2, with national leaders added to the regular staff, will supplement these courses.

### Industrial Education Workshop

The Department of Industrial Education will conduct a 6-credit workshop for experienced teachers throughout the first term. Designed to fill the gaps between early preparation and current requirements for industrial education, work will be done in the newer subjects or areas on curriculum problems, course outlines, teaching guides, methods, instructional aids, evaluation, and necessary manipulative work, but the usual type of shop course is not envisioned. Interests and needs will constitute the basis for groupings and individual work assignments. Upon request, the department will provide further details. There will be no special course fee.

### Human Relations in the Health Field

Leo W. Simmons, professor of sociology at Yale University and presently engaged in social science research dealing with hospital personnel, will conduct a course in human relations in the health field (Nursing 180) during the first two weeks of the first term. This course is of special interest to graduate nurses, social workers, hospital service personnel, and workers from other related fields.

### European Music Festival Tour

A tour of the European music festival centers will be conducted by the chairman of the Music Department of the University of Minnesota, leaving New York on June 24 and returning on September 12. The tour will attend the International Musical Eisteddfod at Llangollen, Wales; the Dolmetsch Festival of early English music in Surrey, the Glyndebourne Opera Festival, Sussex, the Shakespeare Memorial Theatre, Stratford on Avon, and the contemporary English music festival at Cheltenham, England; the Bach festival under the direction of Pablo Casals, Pyrennes-Orientale; open-air concerts and opera in Rome and Florence, the Lyrics Festival in Verona, Italy; the International Music Festival, Aix-en-Provence, France; the Lucerne Music Festival, Switzerland; the Mozart Festival in Salzburg, Austria; and the Wagnerian Opera Festival at Bayreuth, Germany.

The class will be limited to nineteen students who may receive from 3 to 12 credits depending on the scope of the term paper. (See Music 134.)

Also included are special sight-seeing trips in the countries visited—England, Wales, France, Italy, Switzerland, Austria, Germany, and Holland.

For information write to Dean of Summer Session, 850 Johnston Hall, University of Minnesota, Minneapolis 14.

### Journalism and Communications

The program of the School of Journalism offers courses on two levels of interest. First, it provides offerings emphasizing a fundamental knowledge of journalistic techniques and procedures. Journalism majors and advisers of school publications will find this curriculum most useful.

The second level of instruction emphasizes mass communications and their significant role in American life and in professional endeavor. These courses include

mass communications, communication media analysis, public opinion and propaganda, international communications and foreign affairs, freedom of the press and communications law, comparative foreign journalism, and communications research. Many of these offerings are open to nonmajors in the Senior College and the Graduate School.

### Modern Language Institute

During the first term of the Summer Session, the Modern Language Institute will sponsor residence houses, located near the campus, for graduate and undergraduate students of French, Spanish, and German. All activities will be carried on in the language elected by the student. The directors will be Herman Ramras for the Deutsches Haus, James A. Cúneo for the Casa Hispánica, and Jean Carduner for the Maison Française. In each house there will be native assistants.

The program will consist of regular departmental courses conducted in the morning; practical conversation sections at the residence houses in the afternoon; and lectures, round-table discussions, plays, films, music, and dances in the evening. Thus, each house will constitute a milieu for training in the language and culture of the country and will provide a unique opportunity for improvement in the spoken language. This type of instruction also contributes to a better understanding of present-day problems in the countries involved.

The Institute training has proved valuable to students and others who desire training in speaking a foreign language . . . those planning to apply for Fulbright or SPAN scholarships, or to join other foreign study groups . . . teachers or potential teachers of French, Spanish, or German whether or not they are working for graduate degrees . . . men and women training for positions with the government, international organizations, or private business.

Each language program carries 10 quarter credits for the elementary group and 9 for advanced and graduate students. A special fee of \$40, in addition to regular Summer Session fees, is charged for the program offered in a language residence house. Room and board are additional. Several scholarships are available for the German house.

For courses in French and Spanish see pages 43 and 44; in German see page 31.

### American Studies Program

The American Studies summer program is designed for students and professors from abroad as well as for students from the United States. The usual American courses conducted by the academic departments concerned with American Studies (history, literature, philosophy, art and music, and the social sciences) will be supplemented by special courses. Lectures, concerts, and excursions will also be arranged.

The Program in American Studies guides candidates for the B.A. degree to a broad knowledge of their own civilization as preparation for enlightened citizenship. The graduate program prepares for public and social service, library work, creative writing, editing, and teaching in high schools and colleges in these fields: American civilization . . . American history . . . American literature . . . other American humanities and social sciences.

Candidates for all degrees enroll in American courses conducted by the participating departments and in American Studies seminars designed to integrate these courses. Knowledge of a foreign civilization is also required of all candidates.

### Scandinavian Area Studies

The Scandinavian Area Studies program is held alternate summers at the University of Wisconsin and the University of Minnesota. In the summer of 1953 the program is scheduled to be held at the University of Wisconsin with a staff drawn from both Minnesota and Wisconsin. For particulars consult Professor Einar Haugen, Department of Scandinavian Area Studies, University of Wisconsin,

Madison, Wisconsin, or Professor Alik Gustafson, Department of Scandinavian, 13 Folwell Hall, University of Minnesota, Minneapolis 14.

### Russian

The courses in Intensive Russian are not offered this summer. It is the intent of the Summer Session to reinstate the Russian program in the summer of 1954.

### Greek

An elementary Greek course emphasizing the Hellenistic or Koine phase of the language which is of most immediate use in reading the New Testament will be offered both terms. This course is designed essentially for pretheological students and will be limited to a necessary minimum of twenty students. No credit will be allowed until the student satisfactorily completes both the first and second terms of the course.

### Efficient Reading

Adult reading needs are a matter of real concern. The course *Efficient Reading* (Rhetoric 47, page 63), designed for the average and above-average adult reader, provides a unique combination of activities for improving reading speed, comprehension, and vocabulary.

Extensive use is made of such recently developed aids as the Tachistoslides and Harvard Films. Teachers interested in laboratory-type experience in adult reading techniques will find the course of special value.

## GENERAL INFORMATION

On its Minneapolis Campus, the University of Minnesota places at the disposal of the Summer Session student the facilities of eleven schools and colleges comprising this great educational institution—their faculties, libraries, and laboratories, observatory, and museums—and in addition a recreation program of concerts and lectures as well as physical recreation such as swimming, golf, tennis, bowling, and folk and ballroom dancing.

The College of Agriculture, Forestry, and Home Economics and the School of Veterinary Medicine are on the St. Paul Campus and have their own library, laboratories, and recreational facilities.

The campuses are connected 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 the added cultural advantages of two large metropolitan centers—an attraction for the Summer Session student that is unique with the University of Minnesota.

Students who are teachers and are obliged to return to their schools before the close of the second term may arrange, with the consent of instructors, to complete the work *in absentia*. The granting of such permission is not obligatory for any instructor, and students desiring this privilege should ascertain from the instructor at the time of registration 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. Arrangements must be made with the recorder for the proper examination.

### Intercampus Car

For students who are registered for class work on both the Minneapolis Campus and the St. Paul 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 and the School of Veterinary Medicine at the Office of

Admissions and Records, St. Paul Campus; to those registered in other colleges, at the university post office in the basement of Coffman Memorial Union, Minneapolis Campus.

Students who are registered for classes on the Minneapolis Campus and who live in dormitories on the St. Paul Campus will also be given free transportation. Tickets will be issued by the Office of Admissions and Records, St. Paul Campus.

### Parking Facilities

For the summer, facilities for parking are available in three university underground garages—the Union, the Auditorium, and the Center for Continuation Study. Reservations may be made in advance for space in one of these garages for either or both terms by writing to the Department of Protection and Investigation, 430 Johnston Hall, University of Minnesota, Minneapolis 14.

These and other parking facilities are available by the day. There is also ample parking room on the University's outdoor parking lots which are located on and adjacent to the campus.

### General Offices

The office of the Dean of the Summer Session is in 135 Johnston Hall. The Office of Admissions and Records and the office of the Bursar are on the first floor of the Administration Building. For the convenience of students registered in agriculture and home economics, branch offices are established on the second floor of Coffey Hall, St. Paul Campus. The offices of the several schools and colleges together with the office of student affairs function in the control of students during the summer just as during any other quarter of the year.

### University Library

The University Library is open to all students of the Summer Session. The library of the Institute of Agriculture is located in a new building on the St. Paul 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. A reading room located on the ground floor of Johnston Hall is available for all summer students from 8:00 to 5:00 p.m., Monday through Friday.

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 Reference Library of St. Paul grant liberal privileges to Summer Session students.

### University Post Office

The university post offices distribute students' mail addressed to the University. These post offices are located in the basement of the Coffman Memorial Union on the Minneapolis Campus and in Coffey Hall on the St. Paul 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 bulletin is published in the *Minnesota Daily*, the student newspaper of the University of Minnesota. 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 boxes strategically placed on the campuses 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. In addition to the university-maintained cafeterias on campus, 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, 204 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 or Sanford Hall, dormitories for women, the Winchell Cottages for women (cooperative residences), and Centennial Hall, dormitory for men, on the Minneapolis Campus; and Meredith Hall, dormitory for women, and Dining Hall, dormitory for men, on the St. Paul Campus.

## ADMISSION AND REGISTRATION

### Admission

The courses of the Summer Session are open to all qualified high school graduates, regularly admitted students of the University including those attending regular sessions, and those with previous college work. Recent high school graduates must be regularly admitted before enrolling in the Summer Session. Students beginning their university attendance during the Summer Session who wish to attend during the academic year must submit credentials in the usual way.

**Special students**—Students with previous college work who wish only to attend the Summer Session may do so without filing credentials, provided they are in good standing and are not candidates for a degree. Such students will be classified as "special" for the Summer Session only.

Mature persons (those about 24 years of age or older) who are not candidates for a degree but wish to complete certain specific college subjects may be considered for admission as adult special students.

Attendance during the Summer Session in no way guarantees special students admission to the regular academic year. Special students who wish to be considered for admission to a subsequent term must file regular admission applications early in the summer. Nonresidents whose previous records at Minnesota were above C may ordinarily re-enter as regular students.

**Graduate students**—The procedure for admission of graduate students is discussed on pages 19 and 20.

**Degree candidates**—Those who expect to become *candidates for a degree* at the University during the Summer Session must have filed an application for admission and have been regularly admitted to a college of the University.

All students should consult the *General Information Bulletin* for detailed requirements governing admission and the granting of degrees. The *General Informa-*

tion Bulletin and specific college bulletins may be obtained by writing to Office of Admissions and Records, University of Minnesota, Minneapolis 14.

### Registration

In order that the short terms may prove of maximum value, and that the work of the courses may not be interrupted 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.....Monday, June 15, 8:00 a.m. to 4:00 p.m.

For the second term.....Monday, July 20, 8:00 a.m. to 4:00 p.m.

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

Wednesday, June 17 ..... \$2.00

Thursday, June 18 ..... 3.00

Friday, June 19 ..... 4.00

Monday, June 22 ..... 5.00

No registrations are allowed for the first term after Monday, June 22, without the special permission of the dean of the school or college concerned, and the payment of the late fee of \$5.

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

Tuesday, July 21 ..... \$2.00

Wednesday, July 22 ..... 3.00

Thursday, July 23 ..... 4.00

Friday, July 24 ..... 5.00

No registrations will be accepted for the second term later than Friday, July 24, without the special permission of the dean of the school or college concerned, and the payment of the late 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.**

### Registration Tally Procedure

June 15

Students registering in the College of Agriculture, Forestry, and Home Economics or the School of Veterinary Medicine will report to 220 Coffey Hall, St. Paul Campus, for registration materials.

Other students will report to the Main Ballroom, Coffman Memorial Union, for materials. Students without previous college work who do not have an admission certificate should go to the admission table.

Students registering before or after the regular registration day, June 15, and during the second term of the Summer Session will go to the Office of Admissions and Records to obtain registration materials.

As part of the registration procedure, all students, including graduate students, must tally for courses listed below. The student does this by obtaining an I.B.M. class reservation card at the appropriate college tally office indicated. These class reservation cards must be attached to the student's registration blank when it is presented at the college window in the Office of Admissions and Records.

#### Agricultural Biochemistry

118—220CofH

#### Agricultural Economics

180—220CofH

#### Agricultural Engineering

All courses—220CofH

#### Analytical Chemistry

7—210JohH\*

All other courses under 200—136E

#### Art

1, 2, 23, 24, 25, 60, 61, 62, 67, 73, 74,  
75, 138, 150, 151, 152, 157—210  
JohH\*

\* These courses will be tallied in the Main Ballroom, Coffman Memorial Union, on the regular registration day, June 15.

**Art Education**

18—206Bu\*

**Bacteriology and Immunology**53—220CofH for IA, and 210JohH\*  
for other students**Botany**

4, 5—210JohH\*

**Business Administration**

All courses under 200—107VH\*

**Civil Engineering**

All courses under 200—136E

**Composition**

4, 5, 6, 27, 28, 101, 102—210JohH\*

**Curriculum and Instruction**101, 109, 112, 125, 135, 212, 270—  
206Bu\***Drawing and Descriptive Geometry**

All courses—136E

**Economics**All courses under 200—107VH\* for  
BA, and 210JohH\* for other stu-  
dents**Educational Administration**

133, 229, 234—206Bu\*

**Educational Psychology**

133, 134, 211, 216A, 217A—206Bu\*

**Electrical Engineering**

All courses under 200—136E

**Engineering English**

All courses—136E

**Entomology and Economic Zoology**

13, 197—220CofH

**Family Life**

All courses—210JohH\*

**Forestry**

All courses under 200—220CofH

**General College**

All courses—106NH\*

**General Engineering**

All courses—136E

**History and Philosophy of Education**

180—206Bu\*

**Home Economics**

All courses under 200—220CofH

**Home Economics Education**

All courses under 200—220CofH

**Horticulture**

All courses under 200—220CofH

**Humanities**

All courses—210JohH\*

**Industrial Engineering**

All courses under 200—136E

**Inorganic Chemistry**1, 2, 4, 5, 6, 7—220CofH for IA, 136E  
for IT, and 210JohH\* for other stu-  
dents9, 10, 11, 12—136E for IT, and  
210JohH\* for other students

All other courses under 200—136E

**Journalism**

13, 55—210JohH\*

**Mathematics**

All courses under 200—210JohH\*

**Mathematics and Mechanics**

All courses under 200—136E

**Mechanical Engineering**

All courses under 200—136E

**Metallography**

All courses under 200—136E

**Metallurgy**

All courses under 200—136E

**Methods and Student Teaching**

52—206Bu\*

**Mining Engineering**

All courses under 200—136E

**Music**

134—210JohH\*

**Natural Science**

All courses—210JohH\*

**Organic Chemistry**61, 62—136E for IT, and 210JohH\*  
for other students

All other courses under 200—136E

**Personal Orientation**

1—210JohH\*

**Petroleum Engineering**

All courses under 200—136E

**Physical Chemistry**

107, 108—210JohH\*

All other courses under 200—136E

**Physical Education for Men**

1B, 2B—210JohH\*

**Rhetoric**

47—210JohH

**Social Science**

All courses—210JohH\*

**Speech and Theater Arts**1, 2, 3, 32, 65, 71, 83, 103, 106, 111,  
131—210JohH\***Veterinary Medicine**

All courses under 200—220CofH

**Zoology**

51—210JohH\*

\* These courses will be tallied in the Main Ballroom, Coffman Memorial Union, on the regular registration day, June 15.

### Changes in Registration

After a student's registration has been accepted by the recorder, any change must be approved by the Committee on Student Scholastic Standing 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.*

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.

### Tuition and Incidental Fees

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

Tuition fee (per term) .....	\$45.00
Incidental fee† (per term) .....	10.50
<b>Total fee (per term) .....</b>	<b>\$55.50</b>

The following fees are payable each term at the time of registration by each student taking 4 credits or less (whether resident or nonresident) and must be paid before registration is complete:

Part-time tuition fee (4 credits or less) (per term) .....	\$35.00
Incidental fee† (per term) .....	10.50
<b>Total fee (per term) .....</b>	<b>\$45.50</b>

Note—Regular tuition fees as provided during the academic year will be charged all students in Nursing. In Law, Veterinary Medicine, Medicine, and Dentistry, residents pay the regular Summer Session tuition fee, nonresidents pay tuition as provided during the academic year. Special tuition fees are collected in the Division of Library Instruction and the Biological Station. All students pay the Summer Session incidental fee.

Graduate students who have completed all of their graduate work with the exception of their thesis will be allowed to register for *thesis work only* upon the payment of \$22.50 tuition per term and the incidental fee.

Eligible Summer Session staff members pay at the following rates: more than 3 credits, \$19 per term; 3 credits or less or thesis only, \$9.50 per term; plus incidental fee.

For fees for students in the Medical School, see page 69.

For fees for students in the School of Dentistry, see page 84.

For fees for students in the Itasca Forestry and Biological Station, see pages 65 and 66.

For fees for students in Library Instruction, see page 112.

For fees for students registered for nursing courses, see pages 80 and 81.

For fees for students registered in the School of Veterinary Medicine, see page 63.

### Course Fees

*All fees are per term unless otherwise indicated.*

#### Aeronautical Engineering

\$3.00—lab. fee for all soph., jr., sr. students in aero. engr.  
4.50 per solo hr.—20 (pay at U. Airport)  
7.50 per dual hr.—20 (pay at U. Airport)  
42.00—46 (no fee for aero. engr.)

#### Agricultural Education

\$1.50 per cr.—82, 91, 199E

#### Agricultural Engineering

\$1.00—5, 7, 13, 14, 19, 20, 21, 23, 24, 25, 33, 35, 40, 72  
3.00—42  
6.00—41, 43

† The incidental fee of \$10.50 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 and Hearing Clinic, recreation program, *Minnesota Daily*, and the university post-office service.

**Agronomy**

\$2.00—136

**Architecture**

\$3.00—AD I, AD II, AD III, 40

10.00—AD IV

**Art**

\$1.00—1, 2, 3, 4, 5, 11, 12

2.00—20, 20A, 21, 21A, 22A, 33, 34, 43,  
44, 89, 99, 103, 104, 105, 153, 154,  
155, 193, 194, 1953.00—23A, 24A, 25A, 30, 31, 50, 51, 52,  
60, 60A, 61, 61A, 62, 62A, 70, 71, 72,  
110, 111, 112, 150, 151, 152, 200, 201,  
2025.00—10, 23, 24, 25, 32, 40, 41, 42, 45,  
53, 54, 55, 63, 64, 65, 73, 74, 75, 80,  
81, 82, 90, 91, 92, 93, 94, 95, 101, 102,  
180, 181, 182, 190, 191, 192

7.50—140, 141, 142, 143, 144, 145

10.00—83, 83A, 84, 84A, 85, 85A, 123,  
124, 125

15.00—133, 134, 135

**Art Education**

\$1.50—17, 18, 19

2.00 per cr.—84, 86, 86A, 87, 87A, 88,  
88A, 185

2.00—81A, 81B

3.00—56, 57, 58

**Astronomy**

\$1.00—20

**Bacteriology**\$3.00—53, 102, 103, 104, 112, 113, 114,  
115, 116, 122, 124**Biological Station**

\$10.00—lab. fee

**Botany**\$1.50—1, 2, 3, 50, 51, 52, 53, 54, 112, 113,  
114, 115, 118, 119, 121, 127, 130, 132,  
134, 137, 165, 194, 195, 196, 197, 198,  
199

2.25—4, 5

3.00—120, 123, 154, 173, 174, 175, 179,  
180, 181**Business Administration**

\$1.00—170, 171

2.00—65, 66, 74, 130, 139, 150, 152

**Civil Engineering**

\$2.00—51, 52, 53, 137, 146

35.00—23 (summer camp)

**Communication**

\$1.00—1

**Curriculum and Instruction**

\$2.00 per cr.—all courses

**Economics**\$2.50 for one or more courses—32, 33,  
34, 35, 37, 38, 39, 40, 41, 42, 43**Education**\$2.00 per cr.—51A, 51B, 51C, 55A, 55B,  
55N, 71A, 71B, 71C**Educational Psychology**

\$1.00—217, 218

1.50 per cr.—142, 143, 144, 150

1.50—216A, 217A, 218A, 219A

**Electrical Engineering**\$1.00—12, 14, 112, 114, 116, 118, 120,  
127, 128, 129

2.00—16, 122, 124, 126, 164, 165, 166

**Engineering English**

\$1.00—4

**Entomology**\$1.50—5, 21, 51, 52, 56, 63, 64, 114, 117,  
118, 119, 120, 121, 125, 126, 127, 141,  
142, 144, 145, 146, 150, 164, 165, 166,  
170, 175, 176, 179

5.00—55, 128, 129, 140, 168, 169, 177

**Family Life**

\$3.00—14

**General College**

\$1.00—10A

1.50—22A, 22B, 22C, 22X, 23AX,  
23BX, 23CX, 23DX, 24A, 24B, 24C,  
24AX, 24BX, 24CX, 25A, 25B, 25C,  
25D, 25X, 28, 32A, 32B, 32C, 32D,  
32AX, 32BX, 32CX, 33A, 33B, 33C,  
33AX, 33BX, 33CX

2.00—23A, 23B, 23C, 23D

2.50—47A

5.00—26A, 26B

**Geology**

\$1.00—A, B, 23, 24

5.00—175

10.00—100, 115, 150

**Home Economics**

\$2.00—25

**Home Economics Education**

\$2.00 per cr.—91, 93, 94, 197, 199E

**Humanities**

\$1.00—1, 11, 21, 51, 61, 71

**Hydromechanics**

\$2.00—104

**Industrial Education**

\$1.50 per cr.—1, 2, 3, 5, 6, 7, 10, 11, 12,  
15, 16, 20, 21, 25, 26  
2.00 per cr.—50A, 50B, 50C, 70, 75

**Journalism**

\$1.00 general fee for one or more  
courses, excluding Jour. 5  
2.00 plus general fee—51, 58, 59, 67,  
68  
3.00 plus general fee—41, 52, 55  
5.00 plus general fee—10, 66

**Mathematics and Mechanics**

\$1.00—87, 141

**Mechanical Engineering**

\$2.00—1, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15,  
16, 17, 18, 33, 34, 35, 61, 110, 111,  
112, 113, 114, 118, 149, 159, 169, 189,  
198

**Methods and Student Teaching**

\$2.00 per cr.—all courses

**Modern Language Institute (Summer Session)**

\$20.00 per term—Russian (1a, 2a, or 51,  
52, 53)  
40.00 per term—French (22, 58, 109);  
or German (22, 66, 107); or Span-  
ish (22, 58, 109)

**Mortuary Science**

\$1.00—1, 2  
1.50—4, 5, 6  
3.00—7, 20, 21, 22

**Music**

\$1.50—10, 31, 32, 33, 34, 35, 36, 50, 51,  
52, 53, 54, 55, 56, 57, 58  
15.00—Class lessons in 11C, 12C  
25.00—60B, 61B, 62B  
30.00 for one (no cr.) individual lesson  
per week—A, B, C, D, E, F  
30.00 for one (2 cr.); \$60.00 for two  
(4 cr.) individual lessons per week—  
11, 12, 13, 14, 15, 16, 17, 18, 19, 20,  
21, 22, 23, 24, 25, 26, 27  
50.00—13B  
60.00—204

Students paying \$30.00 or more in music  
fees may take other courses by pay-  
ing regular Summer Session fees.

**Music Education**

\$1.50 per cr.—4, 5, 6, 59, 63, 64, 65  
2.00 per cr.—50A, 50B, 53, 60, 61, 62  
30.00 for one (2 cr.); \$60.00 for two (4  
cr.) lessons per week—225E

**Natural Science**

\$1.00—1, 2, 3, 4, 5, 6  
2.00—7, 8, 9

**Physical Education (men)**

\$1.00 per cr.—1A, 1B, 1C, 2A, 2B, 2C  
1.50 per cr.—4A, 4B, 4C, 5A, 5B, 5C,  
6A, 6B, 6C, 7A, 7B, 7C, 8, 9A, 9B,  
60B  
2.00—per cr.—55, 73, 74, 75

**Note:** Towel and locker fee for stu-  
dents using PE facilities for activity,  
\$.25 per term payable at dept. Uni-  
forms for class or recreational ac-  
tivity. \$.20 per term payable at dept.

**Physical Education (women)**

\$2.00 per cr.—47, 48, 57A, 57B, 90A,  
90B, 90C, 94  
2.00—50, 51 (or both)  
2.50 (max. \$5.00 per term)—All non-  
professional, 5, 12, 18, 33, 37, 20A,  
20B, 20C, 21A, 21B, 21C, 21D, 21E,  
22A, 22B, 22C, 40A, 40B, 40C, 41A,  
41B, 42

**Physical Medicine**

\$3.00—75, 93

**Physics**

\$1.00—13 Part I, 13 Part II  
2.00—1a, 2a, 3a, 4, 5, 6, 7, 8, 9, 12, 50,  
52, 110, 112, 120, 121, 122, 134, 136,  
144, 145, 146, 148, 154

**Psychology**

\$1.00—135, 136, 137  
2.00—4, 5, 130, 290, 291

**Public Health**

\$1.00 per cr.—65, 66, 67, 119, 125, 129,  
138, 139, 173  
1.00—80, 140, 150  
1.50—121, 122, 131  
2.00 per cr.—181  
2.00—111  
3.00—143, 144, 184, 185, 186, 187, 188  
100.00—169, 190

**Rhetoric**

\$1.00—1, 12, 22, 28, 54, 59

**Russian**

\$20.00—(1a-2a or 51-52-53)

**Social Work**

\$5.00—210, 211, 212, 215, 216, 217

**Soils**

\$2.00—108, 111

**Speech**

\$1.00—1, 2, 3, 5, 6, 51, 55, 56, 57, 61, 65,  
67, 81, 82, 83, 141, 142  
2.00—31, 32, 33, 34, 66, 71, 72, 73, 78,  
79, 91, 92, 93, 111, 112, 113, 131, 132,  
133, 143, 153

**Technical Aid**\$2.00—80A, 80B, 81A, 81B, 82A, 82B,  
83, 83A, 84A, 85A**Zoology**

\$1.50—21, 51, 52, 53, 55, 57, 58, 59, 75,  
81, 100, 101, 102, 107, 108, 109, 110,  
111, 115, 116, 117, 118, 119, 120, 121,  
125, 126, 127, 132, 143, 144, 145, 146,  
149, 150, 155, 156, 157, 160, 161, 162,  
170, 180, 183, 184, 185  
2.00—14, 15  
3.00—1, 2, 50, 112, 113  
5.00—128, 129, 140  
8.00—182  
10.00—22

**Fees for Courses Requiring Deposit Cards**

Deposit cards may be purchased from the bursar (or from the cashier, Coffey Hall for Agricultural Biochemistry). Chemistry and Biochemistry cards are \$10.00; all others are \$5.00

The course fees listed below will be charged against your deposit card, together with laboratory, material, and breakage, and the unused balance refunded at end of the course. You must present your deposit card to be assigned a lab. desk. Veterans will receive information from their instructor concerning deposit cards and lab. assignments

**Agricultural Biochemistry**

\$2.00—2

5.00—103, 110, 117, 118, 129, 130, 131,  
132, 133, 202, 203, 212**Analytical Chemistry**\$3.00—1, 2, 7, 9, 96, 97, 98, 101, 102, 103,  
104, 105, 106, 107, 108, 109, 122, 123,  
127, 131, 132, 134, 138, 140**Chemical Engineering**\$3.00—105, 106, 111, 112, 113, 151, 152,  
153, 154, 155, 156, 160, 176, 177, 179**Food Technology**

\$5.00—51, 52

**Inorganic Chemistry**\$3.00—1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 13,  
96, 97, 98, 102, 109, 110; Mort. Sci.  
11, 12**Organic Chemistry**\$3.00—61, 62, 64, 96, 97, 98, 102, 130  
10.00—110, 139**Pharmacognosy**\$3.00—55, 56  
5.00—162, 163**Pharmacy**\$5.00 deposit required of all soph., jr.,  
sr. students in Pharmacy**Physical Chemistry**\$3.00—96, 97, 98, 104, 105, 106, 107, 108,  
110, 111, 112, 113, 132, 133, 134, 211,  
212, 213, 231**Physiological Chemistry**

\$3.00—100, 101, 102, 103

**Special Fees****Music Practice Room**

\$1.00 per term for one, \$2.00 for two,  
50 cents for each addtl. hr. per  
week—all instruments except organ  
.20 per hr.—small organ  
.40 per hr.—large organ

**Speech and Hearing Clinic—Nonstudents**

Articulatory cases, per 10 weeks—  
\$15.00 for 1, \$25.00 for 2, \$30.00 for

3, \$35.00 for 4, \$40.00 for 5 lessons  
per week

Stuttering, per session—\$100.00 for  
full-time remediation

**Speech and Hearing Clinic—Students**  
\$5.00 per term—spec. clinical treatment

**Miscellaneous**

\$5.00—Credential examination  
5.00—Large diploma  
2.50—Master's thesis binding  
35.00—Ph.D. thesis binding  
5.00—Special examination

### 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
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

### Scheduling Code and Course Descriptions

Pages 21-114 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 bulletin of the college concerned.

Following each course is a statement, in parentheses, of credits, classes of students eligible, prerequisites, class hours, days of the week, and location of the class. Thus: (3 cred.; jr., sr., grad.; prereq. 12, 13; II MTWThF; 117F) means that course carries three credits, is open to juniors, seniors, and graduate students, has for prerequisites Courses 12 and 13 in the department under which the course is listed, meets at the second hour on Monday, Tuesday, Wednesday, Thursday, and Friday in Room 117, Folwell Hall. Abbreviations for class hours and buildings are interpreted by the lists on page 4.

Contact department office for information on instructors, hours, and rooms not listed or listed as arranged (ar.).

### 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: 1 quarter credit usually requires not less than 10 lectures or recitation periods (2 per week for a summer term requiring 2 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 2 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 Committee on Student Scholastic Standing 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.

### 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 university 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 by 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. In any case, the student must spend two quarters of the senior year in residence. This last requirement may be waived under such rules as may be established by each college for such exemptions. In addition, special residence requirements must be met in several of the schools and colleges. Extension courses (not correspondence study courses) completed in Minneapolis, St. Paul, or Duluth may apply toward the residence requirement. Work done on a campus of the University of Minnesota in Armed Forces College Training Programs is considered residence credit.

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

5. **Attendance at commencement**—A candidate for a degree is required to be present at the commencement exercises at which his degree is conferred. Commencement exercises for Summer Session candidates will be held:

First term..... Thursday, July 16

Second term..... Thursday, August 20

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.

6. **Graduation fee**—each degree, \$10.

7. **Placement Service fee**—required of candidates for degrees from:

Institute of Technology..... \$2.50

College of Education (except Nursing Education)..... 5.50

## 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.

### ADMISSION

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.

### 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 toward a degree. Under no circumstances will a student be admitted to candidacy until he has been in residence for at least one quarter or one term of the 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 for 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 five weeks each. In this case, the candidate will be expected to register for thesis work either in residence or *in absentia* 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 initiation of the degree program.

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 complete and registered in the Graduate School office at least six weeks before the end of the term in which they take the degree (first term: Thursday, June 4, 1953; second term: Thursday, July 9, 1953).

### 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 initiation of the degree program.

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, as compared with Plan A, is 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. The requirements under Plan B are meant to forward the students' 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 the approval of the adviser and the appropriate Graduate Group 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.

Students must register in the Graduate School if their work is to count toward 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 20.)

## AMERICAN STUDIES

### First Term

**Hum.21. American Life I.** The growth of individualism and democracy (with particular attention to minorities) as recorded in American history, social thought, literature, and the arts. (See General Studies, page 28) (3 cred.; all; no prereq.; I MTWThF; 9F) Weimer

**Am.Stu.200.\* Introduction to American Studies.** Exposition of interdisciplinary methods and of the concept of American Studies. (3 cred.; grad., limited to candidates for the M.A. in American Studies; III MTWThF; 4F) McDowell

**Am.Stu.250. Readings in American Civilization.** Independent study of interdisciplinary aspects of American civilization under guidance of members of various departments. (Cred. ar.; grad.; prereq. consent of department chairman; ar.; ar.) Ar.

### Second Term

**Hum.22. American Life II.** The place in American civilization of the land, the city, and the good life; their implications and interrelations. (See General Studies, page 29) (3 cred.; all; no prereq.; I MTWThF; 9F) Stafford

**Am.Stu.251. Readings in American Civilization.** Independent study of interdisciplinary aspects of American civilization under guidance of members of various departments. (Cred. ar.; grad.; prereq. consent of department chairman; ar.; ar.) Ar.

**Note:** See also approved courses in participating departments as listed in the *Bulletin of the Program in American Studies*.

## ANTHROPOLOGY

## First Term

2. **Introduction to World Ethnology.** The appearance of man in the old and new worlds; the formation of culture patterns and the spread of culture and its adaptation in various settings in Asia, Africa, the South Seas, and among the American Indians; the development of civilization; changes in arts, beliefs, and social institutions of primitive communities as observed in modern times. (3 cred.; all; no prereq.; II MTWThF; 15ForH) Spencer
80. **The American Indian.** A survey of the native cultures of the New World. Physical and cultural characteristics. (3 cred.; soph., jr., sr.; no prereq.; IV MTWThF; 15ForH) Spencer
122. **Problems in Anthropology.** Individually directed readings. (Cred. ar.; jr., sr., grad.; prereq. consent of instructor; ar.; ar.) Spencer

## Second Term

1. **Introduction to Anthropology.** A topical treatment of the main phases of anthropology, including physical, archeology, technology, and culture. (3 cred.; all; no prereq.; I MTWThF; 15ForH) Colson
54. **Social Organization.** Forms of social life among primitive peoples. (3 cred.; jr., sr.; no prereq.; II MTWThF; 15ForH) Colson
123. **Problems in Anthropology.** (See 122, first term) (Cred. ar.; ar.; ar.) Colson

## ART

## First Term

## HISTORY OF ART

- Art2. **Great Masters and Movements of Art.** (Page 31†) (3 cred.; prereq. 1 or consent of instructor; II MTWThF; 207bJ) Tselos
- Art67. **Nineteenth-Century European and American Painting.** (Page 33†) (3 cred.; jr., sr.; prereq. 1 or consent of instructor; IV MTWThF; 207bJ) Tselos
- Art157.\* **Nineteenth-Century European and American Painting.** (Page 35†) (3 cred.; jr., sr., grad.; prereq. 9 cred. in history of art or 9 cred. in history or literature with consent of instructor; IV MTWThF; 207bJ) Tselos

## STUDIO COURSES

- Art23-24-25. **Drawing and Design I.** Basic problems of drawing and design. (3 cred.; prereq. 1, but may be taken at the same time as 1; III-IV MTWThF; 104J) Collins
- Art40-41-42. **Sculpture I.** (Page 32†) (3 cred.; prereq. 1; I-II MTWThF; 11J) Morton
- Art60-61-62. **Drawing and Painting II.** (Page 35†) (3 cred.; jr., sr.; prereq. 24 or 31 or equiv. or consent of instructor)  
Sec. 1, I-II MTWThF, 200bJ, Quirt      Sec. 2, III-IV MTWThF, 200aJ, Myers
- Art70-71-72. **Drawing and Painting III.** (Page 36†) (3 cred.; jr., sr.; prereq. 24 or 31; III-IV MTWThF; 200bJ) Quirt
- Art73-74-75. **Presentation Techniques.** (Page 37†) (3 cred.; jr., sr.; prereq. 24, no prereq. for architects; I-II MTWThF; 104J) Collins
- Art90-91-92. **Printmaking.** (Page 36†) (3 cred.; jr., sr.; prereq. 62 or consent of instructor; VI-VII MTWThF; 203J) Myers
- Art140-141-142. **Metal Sculpture and Jewelry.** (Page 36†) (3 cred.; jr., sr., grad.; prereq. 55 or consent of instructor; III-IV MTWThF; 11J) Morton

† For description see the *Bulletin of the College of Science, Literature, and the Arts*, 1951-53.

**Art150-151-152. Problems in Painting.** (Page 36†) (3 cred.; jr., sr., grad.; prereq. consent of instructor)

Sec. 1, III-IV MTWThF, 200aJ, Myers      Sec. 2, III-IV MTWThF, 200bJ, Quirt  
**Art190-191-192. Problems in Printmaking.** (Page 36†) (Cred. ar.; jr., sr., grad.; prereq. 92 or consent of instructor; ar.; ar.) Myers

**Art200-201-202. Advanced Problems in Studio Work.** (Page 36†) (Cred. ar.; prereq. consent of instructor; ar.; ar.) Myers, Quirt

**PHOTOGRAPHY**

**Art10. Photography.** (Page 31†) (3 cred.; no prereq.; V-VIII MWF; 104J) Liebling

**Art83-84-85. Design and Photography.** (Page 37†) (3 cred.; jr., sr.; prereq. 10 or consent of instructor; III-IV MTWThF; 207aJ) Liebling

**Art123-124-125. Advanced Photography.** (Page 38†) (3 cred.; jr., sr., grad.; prereq. 85 or consent of instructor; III-IV MTWThF; 207aJ) Liebling

**Second Term**

**HISTORY OF ART**

**Art1. Introduction to Art.** (Page 31†) (3 cred.; no prereq.; IV MTWThF; 207bJ) Torbert

**Art138.\* Twentieth-Century Art in the United States.** (Page 34†) (3 cred.; prereq. 9 cred. in history of art or 9 cred. in history or literature with consent of instructor; II MTWThF; 207bJ) Torbert

**STUDIO COURSES**

**Art23-24-25. Drawing and Design I.** (See first term) (I-II MTWThF; 104J) Downs

**Art30-31. Drawing and Painting I.** (Page 32†) (2 cred.; no prereq.; I-II MTWThF; 200bJ) Arnest

**Art40-41-42. Sculpture I.** (See first term) (V-VII MTWThF; 405E) Tovish

**Art45. Ceramic Processes.** (See Art 93, page 37†) (3 cred.; no prereq.; I-II MTWThF; 10J) Tovish

**Art60-61-62. Drawing and Painting II.** (See first term) (I-II MTWThF; 200bJ) Arnest

**Art70-71-72. Drawing and Painting III.** (See first term) (III-IV MTWThF; 200bJ) Arnest

**Art80-81-82. Sculpture II.** (Page 36†) (3 cred.; jr., sr.; prereq. 42 or equiv.; VIII-IX MTWThF; 405E) Tovish

**Art94-95. Ceramic Design.** (Page 37†) (3 cred.; jr., sr.; prereq. 45 or consent of instructor; III-IV MTWThF; 10J) Tovish

**Art101-102. Ceramic Sculpture.** (Page 36†) (3 cred.; jr., sr., grad.; prereq. 45 or consent of instructor; III-IV MTWThF; 10J) Tovish

**Art150-151-152. Problems in Painting.** (See first term) (III-IV MTWThF; 200bJ) Arnest

**Art180-181-182. Problems in Sculpture.** (Page 36†) (Cred. ar.; jr., sr., grad.; prereq. 82, 102, or 142 or consent of instructor; VIII-IX MTWThF; 405E) Tovish

**Art200-201-202. Advanced Problems in Studio Work.** (See first term) (III-IV MTWThF; 200bJ) Arnest

**PHOTOGRAPHY**

**Art10. Photography.** (See first term) (III-IV MTWThF; 104J) Downs

**Art83-84-85. Design and Photography.** (See first term) (III-IV MTWThF; 104J) Downs

**Art123-124-125. Advanced Photography.** (See first term) (III-IV MTWThF; 104J) Downs

† For description see the *Bulletin of the College of Science, Literature, and the Arts*, 1951-53.

## ASTRONOMY

### First Term

11. **Descriptive Astronomy.** (5 cred.; all; no prereq.; III-IV MTWF and one evening a week for observation; 133Ph) Luyten
13. **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.; 7:30 to 9:00 p.m. MW, approximately the latter half of the time being used in observation; 133Ph) Luyten

## BOTANY§

### First Term

4. **General Botany.** A survey lecture and laboratory course on the form, structure, and functions of plants; reproduction in plants and the principles of inheritance and variation; relations of plants to environment; the principal groups of plants; and organic evolution. (5 cred.; all; no prereq.; lect. I MTWThF, B6Bo; lab. II-III MTWThF, 4, 5Bo) Hall
- 194.\* **Problems.** Advanced work in some specialized field of botany. (1-5 cred.; jr., sr., grad.; prereq. consent of instructor; ar.; ar.) Ar.

### Second Term

5. **General Botany.** (See 4, first term) (5 cred.; all; prereq. 4 or equiv.; lect. I MTWThF, B6Bo; lab. II-III MTWThF, 4, 5Bo) Banks
- 195.\* **Problems.** (See 194, first term) (1-5 cred.; ar.; ar.) Ar.

## CLASSICS

### First Term

#### GREEK

- 1.† **Beginning Greek.** (See page 8) An accelerated course in the fundamentals of the Greek language, with particular attention to the Hellenistic ("New Testament") phase. Recommended particularly for presemenary students with no previous knowledge of the language. (5 cred.; no prereq.; II-III MTWThF; 108F) Anderson

### Second Term

#### COURSE FOR WHICH NO KNOWLEDGE OF GREEK OR LATIN IS REQUIRED

- 24.¶ **Technical Terms of Science, Medicine, and the Humanities.** A course in vocabulary building with special reference to Greek and Latin elements in English: prefixes, suffixes, and root words in modern technical vocabularies. (3 cred.; soph., jr., sr.; no prereq.; III MTWThF; 110F) McDonald

#### GREEK

- 2.† **Beginning Greek.** (Continuation of Greek 1, first term) (5 cred.; prereq. 1 or equivalent; II-III MTWThF; 108F) Anderson
- 171.\* **Independent Reading Course.** Designed to provide the advanced student, in consultation with the instructor, with selected reading materials suitable for a well-balanced program. (3 cred.; jr., sr., grad.; prereq. consent of instructor; II MTWThF; 103F) McDonald

† To receive credit for 1, a student must complete 2.

§ For additional courses in the second term, see Itasca Forestry and Biological Station, page 63.

¶ Credit will be allowed in either English or Classics.

## LATIN

- 171.\* **Independent Reading Course.** Designed to meet the same needs as Greek 171 (see above). (3 cred.; jr., sr., grad.; prereq. consent of instructor; II MTWThF; 103F) McDonald

## COMMUNICATION

See page 51.

## ECONOMICS

See School of Business Administration, pages 105-110  
and Agricultural Economics, page 58.

## EFFICIENT READING

See Rhetoric, page 63.

## ENGLISH¶¶

## First Term

## LITERATURE

23. **Introduction to Literature.** The Romantic movement and the Victorians. Wordsworth, Byron, Shelley, Keats, Lamb, Carlyle, Browning, and Arnold. (6 cred.; soph., jr., sr.; prereq.§; I-II MTWThF; 204F) Buckley
38. **Modern Literature.** Readings in twentieth-century British and American poetry and drama. Intended for students in all departments and colleges. Selected readings, *not* a full historical survey. (3 cred.; soph., jr., sr.; prereq.§; IV MTWThF; 206F) Coxe
55. **Shakespeare.** The reading of plays from Shakespeare's early and middle periods—*Richard II*, *A Midsummer Night's Dream*, *The Merchant of Venice*, *Much Ado About Nothing*, and two or three other plays selected by the instructor. (3 cred.; jr., sr.; prereq.§§; II MTWThF; 109F) del Plaine
- 56.¶ **Shakespeare.** The reading of plays from Shakespeare's middle and later periods—*Twelfth Night*, *Hamlet*, *Macbeth*, *The Tempest*, and two other plays selected by the instructor. (3 cred.; jr., sr.; prereq.§§; IV MTWThF; 205F) Crow
73. **American Literature.** Notable authors from Edwards to Holmes. (3 cred.; jr., sr.; prereq.§§; I MTWThF; 301F) Marx
75. **Chaucer.** The 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.§§; I MTWThF; 305F) Allen
100. **Old English (Anglo-Saxon).** An introduction to the sounds and grammar with some prose reading. The relation to modern English is stressed. (6 cred.; jr., sr., grad.; prereq.††; I-II MTWThF; 303F) Clark
- 106.\* **Whitman and Mark Twain.** (3 cred.; jr., sr., grad.; prereq.††; III MTWThF; 204F) Marx
- 113.\* **American Short Story.** A historical examination of the American short story from the eighteenth century to the present. (3 cred.; jr., sr., grad.; prereq.††; IV MTWThF; 107F) Turpie
- 120.\* **Interpretation of Poetry.** A study of certain technical aspects of poetry in relation to poetic meaning; analysis of a number of short poems. (3 cred.; jr., sr., grad.; prereq.††; II MTWThF; 207F) Unger

§ English A-B-C, or Composition 4-5-6, or Communication 1-2-3, or exemption from requirement.

¶ Students may take 56 before 55 if necessary.

†† Six credits in English literature, exclusive of A-B-C.

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

¶¶ Credit will be allowed in English for Classics 24.

- 127.\* **Drama: 1730-1850.** Development of sentimentalism and the reaction: Goldsmith and Sheridan. The rise of melodrama. Early nineteenth-century poetic drama. (3 cred.; jr., sr., grad.; prereq.††; III MTWThF; 206F) Hillhouse
- 143a.\* **Frost and Faulkner.** (3 cred.; jr., sr., grad.; prereq.††; IV MTWThF; 306F) O'Connor
- 148a.\* **Medieval English Romances (chiefly Arthurian).** A survey of the sources, motifs, and development. The romances will be read in modern English translations. (3 cred.; jr., sr., grad.; prereq.††; III MTWThF; 205F) Crow
- 154.\* **American Novel.** The history of the American novel from beginning to the present. (3 cred.; jr., sr., grad.; prereq.††; II MTWThF; 206F) Turpie
- 162.\* **Milton.** The minor poems, *Areopagitica*, *Paradise Lost*, and *Samson Agonistes*. (3 cred.; jr., sr., grad.; prereq.††; IV MTWThF; 303F) Unger
165. **Introduction to Modern English.** A scientific approach to the sounds and grammar of present-day English, with some attention to syntax; implications for a reasonable attitude toward English usage in America. (Required of education majors in English.) (3 cred.; jr., sr., grad.; prereq.††; II MTWThF; 305F) Allen

## 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 of Speech and Theater Arts. Upon notification by the English Department, registration should be made through the Extension Division, Room 57, Nicholson Hall. A special fee of \$15 for the course must be paid by the student to the Extension Division at the time of registration. (No cred.; ar.) Ar.
4. **Freshman Composition.** Practical training in reading and writing. (3 cred.; all; prereq. placement test; III MTWThF; 303F) Ar.
5. **Freshman Composition.** A continuation of Comp. 4. (3 cred.; all; prereq. Comp. 4 or Communication 1; I MTWThF; 206F) Ar.
6. **Freshman Composition.** A continuation of Comp. 5. (3 cred.; all; prereq. Comp. 5 or Communication 2; II MTWThF; 205F) Ar.
27. **Advanced Writing.** A course in formal exposition, stressing adequate content, logical development, and organization of material. (Not to be confused with Comp. 7) (3 cred.; soph., jr., sr.; prereq.§; IV MTWThF; 109F) del Plaine
101. **The Writing of Fiction.** A study of the principles of the composition of fiction. Class meetings are devoted to the analysis of examples drawn from standard sources. Writing by students is criticized in individual conferences. (3 cred.; jr., sr., grad., others with consent of instructor; prereq. for undergraduates 6 cred. above 50 in composition or consent of instructor; VII-VIII TTh; 304F) Coxe

## Second Term

## LITERATURE

22. **Introduction to Literature.** The Restoration and the Eighteenth Century. Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding, and Sheridan. (6 cred.; soph., jr., sr.; prereq.§; III-IV MTWThF; 204F) Krieger
39. **Modern Literature.** The novel since Thomas Hardy. Intended for students in all departments and colleges. Selected readings, *not* a full historical survey. (3 cred.; soph., jr., sr.; prereq.§; I MTWThF; 206F) Steinmann
55. **Shakespeare.** (See first term) (III MTWThF; 206F) Blum
- 56.¶ **Shakespeare.** (See first term) (I MTWThF; 303F) Christie

§ English A-B-C, or Composition 4-5-6, or Communication 1-2-3, or exemption from requirement.

†† Six credits in English literature, exclusive of A-B-C.

¶ Students may take 56 before 55 if necessary.

74. **American Literature.** Notable authors from Whitman to Hemingway. (3 cred.; jr., sr.; prereq.§§; II MTWThF; 204F) Kwiat
- 104.\* **Emerson and Thoreau.** (3 cred.; jr., sr., grad.; prereq.††; IV MTWThF; 206F) Miller
- 105.\* **Hawthorne and Melville.** (3 cred.; jr., sr., grad.; prereq.††; III MTWThF; 207F) Stafford
107. **Howells and James.** (3 cred.; jr., sr., grad.; prereq.††; II MTWThF; 206F) Miller
- 110.\* **Romantic Poets of the Early Nineteenth Century.** Byron, Shelley, Keats, etc. (3 cred.; jr., sr., grad.; prereq.††; II MTWThF; 303F) Stange
- 126.\* **Drama, 1660-1730.** History of English drama from the opening of the theaters in 1660: the heroic play, tragedy, comedy of manners, beginnings of sentimental comedy. (3 cred.; jr., sr., grad.; prereq.††; IV MTWThF; 109F) Jackson
- 138.\* **The Nineteenth Century in English Literature.** Studies in mid-Victorian poetry and prose: Mill, Dickens, the middle and later Tennyson and Browning, poetry and prose of Matthew Arnold. (3 cred.; jr., sr., grad.; prereq.††; IV MTWThF; 303F) Stange
- 156.\* **American Drama.** Survey of American drama in the eighteenth and nineteenth centuries. (3 cred.; jr., sr., grad.; prereq.††; I MTWThF; 204F) Hornberger

#### COMPOSITION

5. **Freshman Composition.** (See first term) (I MTWThF; 305F) Ar.
6. **Freshman Composition.** (See first term) (II MTWThF; 207F) Steinmann
28. **Advanced Writing.** A course in the writing of description and narration, stressing methods and technique, particularly in simple narratives of general or technical interest: biography, travel, expanded incident, process, sketch. (3 cred.; soph., jr., sr.; prereq.§; III MTWThF; 303F) Christie
102. **The Writing of Fiction.** (See 101, first term) (VII-VIII TTh; 304F) Blum

#### FAMILY LIFE

See General Studies, below and page 29.

#### FAMILY LIFE EDUCATION, MARRIAGE AND

See pages 86 and 92.

#### FAMILY LIFE WORKSHOP

See pages 5, 86 and 92.

#### FOREIGN STUDY SEMINAR

See General Studies, pages 28 and 29.

#### GENERAL STUDIES

##### *First Term*

##### FAMILY LIFE

**F.L.1. Preparation for Marriage.** A discussion of such topics as the function of the family today, problems of dating and courtship, the engagement, relations of husband and wife, family crises, and bases of marital stability. (3 cred.; all; no prereq.)

Sec. 1, II MTWThF, 107TNM, Swan

Sec. 2, IV MTWThF, 107TNM, Swan

§ English A-B-C, or Composition 4-5-6, or Communication 1-2-3, or exemption from requirement.

†† Six credits in English literature, exclusive of A-B-C.

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

- F.L.15. The Home and Its Furnishing.** Present-day housing problems; choice of location; house plans as they affect family living; exterior and interior design; choice of appropriate furnishings and accessories; building furnishing costs. (3 cred.; all; no prereq.; II MTWThF; 206WeH) Ludwig
- F.L.25. 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. (Students who have taken C.W. 40 or 80 may not receive credit for this course.) (3 cred.; all; no prereq.; IV MTWThF; 206WeH) Brieland

## FOREIGN STUDY

- 161. Seminar for Foreign Study I.** A directed field study in selected foreign countries, investigating the current economic, political, educational, cultural, and religious patterns of life. Each student in the seminar will study the country carefully before embarking and write a comprehensive report of his findings upon returning. (6 cred.; prereq. approval before December by a faculty selection committee. Grad. students must have also the approval of their faculty adviser.) Conlin, Luckey, Magner, White

## HUMANITIES

- Hum.1. Humanities in the Modern World I.** The old regime, the revolution, neo-classicism, and romanticism. Period: from about 1740 to about 1820. Authors: Voltaire, Rousseau, Burke, Paine, Goethe, and the poets. One historical novel, Tolstoy's *War and Peace*. (3 cred.; all; no prereq.; II MTWThF; 122JohH) Bryan
- Hum.4. Humanities in the Modern World IV.** An introduction to the study of the humanities since World War I. The authors studied include Freud, Lenin, Koestler, T. S. Eliot, Kafka, Ortega, and others. The background topics include civilization between two wars, the impact of psychoanalysis, communism versus fascism, etc. (3 cred.; all; no prereq.; IV MTWThF; 122JohH) Ross
- Hum.21. American Life I.** The growth of individualism and democracy (with particular attention to minorities) as recorded in American history, social thought, literature, and the arts. (See American Studies, page 21) (3 cred.; all; no prereq.; I MTWThF; 9F) Weimer
- Hum.52. Humanities in the Modern World.** The industrial revolution; liberalism and socialism; the psychology of the individual. Period: from about 1776 to 1890. Authors: Carlyle, Mill, Marx, Smith, Malthus, Ibsen, Flaubert, Dostoyevsky, and the poets. A student may not receive credit for this course if he has completed 2. (3 cred.; jr., sr.; no prereq.; I MTWThF; 113JohH) Bryan
- Hum.61. The Greek Heritage.** The golden age of Athens—tragedy, the concepts of goodness and beauty, the struggle for the state; the age of reason—the concepts of reason, justice, order. Selected readings in the historians and Aristotle; longer readings in Homer, Plato, the dramatists. Greek architecture and sculpture. A student may not receive credit for this course if he has completed 11. (3 cred.; jr., sr.; no prereq.; III MTWThF; 122JohH) Ross

## NATURAL SCIENCE

- Nat.Sci.165. Science in World Affairs.** Consideration of the social and intellectual problems raised by the advances of contemporary science with attention to proposed solutions. The discussions will deal with such matters as atomic energy, eugenics, nutrition, behaviorism, and treatment of science in totalitarian countries. (3 cred.; jr., sr., grad.; prereq. one year of biological and of physical science in high school or college or consent of instructor; II MTWThF; 143Ph) Graubard

**Nat.Sci.175. Survey of Science History.** Examination of the monumental achievements of science during recent centuries with particular emphasis upon the culture, equipment, and beliefs which surrounded each development. A one-term summary of the longer Course 171-172-173 and therefore not open to those who have taken any portion of that course. (3 cred.; jr., sr., grad.; prereq. one year of biological and of physical science in high school or consent of instructor; III MTWThF; 145Ph) Graubard

PERSONAL ORIENTATION

**Per.Or.1. 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. (Limited to 30) (2 cred.; all; no prereq.; IV MTWThF; 303JohH) Premack

SOCIAL SCIENCE

**Soc.Sci.1. Introduction to Social Science.** An integrated study of the factors—historical, political, economic, social, psychological and cultural—that influence man's behavior. Course 1 deals with the basic theme of the development of personality. The entire course, 1-2-3, but not any part of it, will satisfy the social science requirement under Plan I for admission to the Senior College of Science, Literature, and the Arts, the School of Business, and to the College of Education. (3 cred.; all; no prereq.; II MTWThF; 150ForH) Naftalin

**Soc.Sci.3. Introduction to Social Science.** (Continuation of 1-2) The integrating theme is the quest for community in modern society. (3 cred.; all; no prereq.; I MTWThF; 115JohH) Potter

**Soc.Sci.11. International Relations.** A survey of the world's critical areas and an examination of international forces in war and peace. This course offers a basis for informed evaluation of future as well as present international situations. (3 cred.; all; no prereq.; III MTWThF; 115JohH) Turner

Second Term

FAMILY LIFE

**F.L.1. Preparation for Marriage.** (See first term) (III MTWThF; 107TNM) Hansen

FOREIGN STUDY

**162. Seminar for Foreign Study II.** (Continuation of 161, see first term) (6 cred.) Conlin, Luckey, Magner, White

HUMANITIES

**Hum.2. Humanities in the Modern World II.** (See description of Hum. 52, first term) (3 cred.; all; no prereq.; II MTWThF; 122JohH) Rosenfeld

**Hum.4. Humanities in the Modern World IV.** (See first term) (III MTWThF; 122JohH) Rosenfeld

**Hum.22. American Life II.** The place in American civilization of the land, the city, and the good life; their implications and interrelations. (See American Studies, page 21) (3 cred.; all; no prereq.; I MTWThF; 9F) Stafford

**Hum.53. Humanities in the Modern World.** Period: from about 1840 to about 1914. Authors: Huxley, Arnold, Turgeneff, Nietzsche, Shaw, Mann, and the poets. A student may not receive credit for this course if he has completed 3. (3 cred.; jr., sr.; no prereq.; I MTWThF; 114JohH) Ames

**Hum.62. Roman and Medieval Heritage.** Roman jurisprudence and organization; epicureanism and stoicism. Selections from Lucretius, Epictetus, Marcus Aurelius. Medieval faith, theocracy. Selections from St. Augustine, Dante,

Chaucer. Ecclesiastical and feudal architecture. A student may not receive credit for this course if he has completed 12. (3 cred.; jr., sr.; no prereq.; III MTWThF; 113JohH) Ames

#### PERSONAL ORIENTATION

**Per.Or.1. How to Study.** (See first term) (Limited to 30) (IV MTWThF; 303JohH) Tollefson

#### SOCIAL SCIENCE

**Soc.Sci.2. Introduction to Social Science.** (Continuation of 1) The integrating theme is work as a central aspect of modern life. (3 cred.; all; no prereq.; II MTWThF; 115JohH) Potter

### GEOGRAPHY

#### First Term

- 4.† Human Geography.** The geography of population and principal ways of life; the capacity of the earth for future population. (5 cred.; all; no prereq.; II-III MTWThF; 285ForH) Broek
- 101. Western and Central Europe.** An introduction to the major physical and cultural regions of Europe as a whole, followed by a more intensive discussion of the population patterns, resources, and industries of the individual countries of western and central Europe. (3 cred.; jr., sr., grad.; prereq. 5 cred. in geography or consent of instructor; I MTWThF; 285ForH) Kish
- 144.§ Political Geography.** An investigation of selected regions, in terms of the physical and ethnic environment as affecting political organization and international relations. (3 cred.; jr., sr., grad.; prereq. 12 cred. in geography, history, or political science, or consent of instructor; IV MTWThF; 285ForH) Kish
- 301.\* Research Problems in Geography.** (Cred. ar.; hrs. ar.; ar.) Staff

#### Second Term

- 67.¶ Geography of Minnesota.** A geographical analysis of the physical and human resources and commercial production of Minnesota. Discussion of map sources, literature, and problems of the geography of the state. Saturday field trips in central and eastern Minnesota will replace the MTW classroom periods and a part of the outside reading during the last three weeks of the session. (3 cred.; jr., sr.; prereq. 5 cred. in geography or consent of instructor; II MTWThF; 285ForH) Borchert
- 107. Geography of the Soviet Union.** The character of and bases for the regional diversity of physical resources, population, agriculture, manufacturing, and transportation in the U.S.S.R. (3 cred.; jr., sr., grad.; prereq. 5 cred. in geography or consent of instructor; IV MTWThF; 285ForH) Borchert
- 301.\* Research Problems in Geography.** (Cred. ar.; hrs. ar.; ar.) Borchert

### GEOLOGY AND MINERALOGY

#### First Term

- 1. 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,

† Not open to students who have previously taken 45.

§ Not open to students who have previously taken 43.

¶ Not open to students who have previously taken 47.

geysers, oceans, volcanoes, etc. Lectures supplemented by laboratory work with minerals and rocks. Also several field excursions. (5 cred.; all; no prereq.; I-II MTWThF; 210P) Thiel

115. **Field Work in Southeastern Minnesota.** (July 15 to 30, approximately) Stratigraphic methods and principles as illustrated by study of Cambrian and Ordovician rocks. (3 cred.; prereq. 25) Bell
- 150.† **Field Geology (Black Hills).** (June 15 to July 15, approximately) (Cred. ar.; jr., sr., grad.; prereq. 125) Swain
170. **Geologic Problems.** (3 cred.; jr., sr., grad.; prereq. consent of major adviser; ar.; ar.) Thiel

### Second Term

2. **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; I-II MTWThF; 210P) Swain
170. **Geologic Problems.** (See first term) Swain

*In addition to the courses definitely offered, graduate students may register for Geology 211, 241, 243, or 245 and do their work under the supervision of the instructors in residence.*

Note—For further information see instructors.

## GERMAN

### First Term

1. **Beginning A.** (5 cred.; all; no prereq.; I-II MTWThF; 209½F) Wood
- 3-4. **Beginning C or Intermediate.** (5 cred.; all; prereq. two or more years of high school German; I-II MTWThF; 209F) Pfeiffer
65. **Modern Drama.** (3 cred.; jr., sr.; prereq. 3 cred. above 59; II MTWThF; 208F) Ramras
- 155.\* **Expressionism.** (3 cred.; sr., grad.; prereq. 72 or equiv. and 11 cred. above 59; VI-VII MTh; 208F) Wood
- 162.\* **Heine.** (3 cred.; sr., grad.; prereq. 72 or equiv. and 11 cred. above 59; VI-VII TF; 208F) Pfeiffer

### DEUTSCHES HAUS I

22. **Intermediate Conversation and Oral Practice.** (Offered only in German House) This course is intended for students who understand German fairly well but who need assurance in self-expression and a basic active vocabulary. A thorough study will be made of the material to be used in the conversation sections for the day. Then the students will subdivide into smaller groups and their entire time be devoted to actual conversation under the supervision of native teachers. (5 cred.; prereq. 1 and 2 or equiv.) Staff
66. **Advanced Oral Practice and Self-Expression.** (Offered only in German House) This course is intended primarily to develop self-confidence in expressing ideas in German. It will consist of daily training in current German based on the techniques used by the Army Language Training School; prepared discussion on assigned topics with definite vocabulary preparation, short debates, oral reports, and oral criticisms of books and articles. (5 cred.; prereq. 3 and 4 or equiv.) Staff

† A maximum of 6 credits will be granted after report is completed.

‡ See Modern Language Institute, page 7.

- 107. German Stylistics.** (Offered only in German House) The purpose of this course is to enable advanced students and especially teachers of German to acquire a finer feeling for German style, a sense for shades of expression, and a complete mastery of certain grammatical and idiomatic difficulties. Model selections of prose will form the basis for imitative composition. The course aims to strengthen the background and broaden the range of the American teacher of German. (4 cred.; prereq. consent of instructor) Staff

### Second Term

- 2. Beginning B.** (5 cred.; all; prereq. 1 or one year of high school German; I-II MTWThF; 209½F) Menze

## GREEK

See Classics, page 24.

## HISTORY

### First Term

- 1. Civilization of the Modern World: Part I.** (3 cred.; all; no prereq.; II MTWThF; 140ForH) Ar.
- 2. Civilization of the Modern World: Part II.** (3 cred.; all; no prereq.; IV MTWThF; 85ForH) Ar.
- 16. Ancient Civilization: Part III.** (3 cred.; no prereq.; I MTWThF; 115ForH) Jones
- 20. American History: Part I.** (3 cred.; soph., jr., sr.; no prereq.; II MTWThF; 20ForH) Ar.
- 21. American History: Part II.** (3 cred.; soph., jr., sr.; no prereq.; IV MTWThF; 20ForH) Ar.
- 52. Ancient Civilization: Part III.** (3 cred.; jr., sr., not open to those who have credit for 16; I MTWThF; 115ForH) Jones
- 79. The United States in the Twentieth Century: Part I.** (3 cred.; jr., sr.; no prereq.; IV MTWThF; 180ForH) Beatty
- 87. The American Colonies: Part II.** (3 cred.; jr., sr.; II MTWThF; 185ForH) Osgood
- 89. Economic History of Modern War.** (3 cred.; jr., sr.; II MTWThF; 115ForH) Bowditch
- 100. History of the Ancient Near East: Part I.** (3 cred.; jr., sr., grad.; III MTWThF; 160ForH) Jones
- 107a. Nineteenth-Century Europe: Part II.** (3 cred.; jr., sr., grad.; III MTWThF; 115ForH) Bowditch
- 134. World War II: Part I.** (3 cred.; jr., sr., grad.; I MTWThF; 155ForH) Deutsch
- 144. American Folklore: Part II.** (3 cred.; jr., sr., grad.; I MTWThF; 180ForH) Jordan
- 157. Survey of Latin-American History: Part I.** (3 cred.; jr., sr., grad.; II MTWThF; 180ForH) Beatty
- 177c. Readings in Recent European History: Part II.** (3 cred.; sr., grad.; prereq. lect. course in Twentieth-Century Europe or World War II, or consent of instructor; III MTWThF; 244ForH) Deutsch
- 186d. Readings in Nineteenth-Century American History: Part II.** (3 cred.; sr., grad.; III MTWThF; 175ForH) Jordan
- 187a. Readings in the American West: Part III.** (3 cred.; sr., grad.; ar.: ar.) Osgood

### Second Term

3. **Civilization of the Modern World: Part III.** (3 cred.; all; no prereq.; I MTWThF; 120ForH) Ar.
22. **American History: Part III.** (3 cred.; soph., jr., sr.; no prereq.; I MTWThF; 115ForH) Noble
- 66a. **Renaissance and Reformation: Part II.** (3 cred.; jr., sr.; II MTWThF; 175ForH) Thompson
88. **American Colonies: Part III.** (3 cred.; jr., sr.; II MTWThF; 115ForH) Tyler
- 97a. **History of the South: Part I.** (3 cred.; jr., sr.; IV MTWThF; 115ForH) Noble
- 108a. **Nineteenth-Century Europe: Part III.** (3 cred.; jr., sr., grad.; III MTWThF; 120ForH) Wolf
- 139a. **American History, 1850-1900: Part III.** (3 cred.; jr., sr., grad.; II MTWThF; 120ForH) Loehr
147. **American Economic and Social History: Part II.** (3 cred.; jr., sr., grad.; IV MTWThF; 120ForH) Loehr
151. **Social and Intellectual History of the United States: Part III.** (3 cred.; jr., sr., grad.; III MTWThF; 115ForH) Tyler
- 178c. **Readings in Recent European History: Part III.** (3 cred.; sr., grad.; prereq. lect. course in Twentieth-Century Europe or World War II, or consent of instructor; IV MTWThF; 244ForH) Wolf

### HOW TO STUDY

See General Studies, Personal Orientation, pages 29 and 30.

### HUMANITIES

See General Studies, pages 28 and 29.

### SCHOOL OF JOURNALISM¶

#### First Term

10. **Photography.** (See Art 10, page 23) (3 cred.; no prereq.; V-VIII MWF; 104J) Liebling
13. **Introduction to Journalistic Writing.** Lectures, practice and conferences. The nature of journalistic communication. The media. The audiences. The essentials of journalistic writing: newspaper, radio, television, magazine, advertising. Practice in fact-gathering, interviewing, and other journalistic techniques. (Limited to 25 in a section) (3 cred.; soph., jr., sr. with C average or better; prereq. English A-B-C or Composition 4-5-6 or Communication 1-2-3 or exemption from English requirement; I-II MTWThF; 212MurH) Nixon
18. **Principles of Advertising.** Theory, principles, and functions of advertising; its role in the economic, social, and marketing structure. Newspapers, magazines, and radio as advertising media. (3 cred.; soph., jr., sr.; prereq. 13, C average, and Composition 27-28; IV MTWThF; 302MurH) Perry
55. **Advertising and Newspaper Topography.** The principles of graphic presentation. Newspaper make-up. Preparation of layouts for advertisements and printed pieces. Instruction in the handling of headline forms, copy blocks, illustrations, borders, and decorations, and how to meet other typographical and make-up problems. Practical work in hand composition and studies in the appropriate uses of types. The course is planned for supervisors of school publications as well as for undergraduate majors in journalism. (3 cred.; jr., sr.; prereq. for journalism majors, Senior College standing, for minors, 11 and 41)

Lect. VI MW, 302MurH, Barnhart

Lab. 1, VI-VII TTh, 315MurH, Barnhart  
2, VII-VIII MW, 315MurH, Barnhart

¶ See Journalism and Communication, page 6.

- 82. 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; III MTWThF; 302MurH) Barnhart
- 111.\* International Communications and Foreign Affairs.** The development, use and regulation of international communications facilities. The relation of communications to the conduct of diplomacy, economic interchange, and cultural relations in war and peace. International newsgathering agencies: history, development, present status. Factors affecting the gathering and dissemination of information throughout the world. (3 cred.; jr., sr., grad.; no prereq; II MTWThF; 311MurH) Park
- 113.\* Mass Communications.** Analysis of channels and barriers between the communicator and the mass audience. Emphasis upon the problems of communicating information and ideas through newspapers, magazines, books, radio, film, television, and other media. Lectures and reading present a theory of communications which is supported by existing research studies in various fields. Concepts and hypotheses for further research are examined. (3 cred.; prereq. sr. or grad. students in journalism, or sr. or grad. students who have consent of instructor; IV MTWThF; 311MurH) Nixon
- 115.\* Communication Media Analysis.** Methods for analyzing the content and reader- or listenership of newspapers, periodicals, radio broadcasts, and motion pictures. Attitude studies and reading tests involving these media. (3 cred.; jr., sr., grad.; prereq. 51 and consent of instructor, or Economics 5 or Psychology 70 or equiv. and consent of instructor; I MTWThF; 311MurH) Jones
- 130.\* Communication Agencies, Propaganda, and Public Opinion.** The agencies of mass communication and their role in the opinion-making process. Propaganda techniques and strategies of governments, political parties, pressure groups, and other organized groups that seek to control mass behavior. Democratic procedures contrasted with authoritarian methods of gaining acceptance. Cultural relations programs and propaganda campaigns on the ideological front. (3 cred.; jr., sr., grad.; prereq. 15 cred. in the social sciences; III MTWThF; 105MurH) Casey
- 210.\* Research in Communications Problems.** Individual research in historical or contemporary phases of newspaper, magazine, radio, or advertising fields. (3 cred.; prereq. grad. standing and consent of director of the school; ar.; ar.) Ar.

### Second Term

- 10. Photography.** (See first term) (III-IV MTWThF; 104J) Downs
- 86. Advertising Copy Writing.** A study of advertising media and advertising appeals. Training in techniques of writing advertising copy for newspapers, magazines, direct mail, posters, and brochures, and in planning advertising campaigns. (3 cred.; jr., sr.; prereq. 51 or 41, and 55; IV MTWThF; 311MurH) Perry
- 112.\* Comparative Foreign Journalism.** The press in the principal foreign countries. Similarities and differences among the press systems; cultural, technological, and economic bases for differences. Comparison and contrast with the newspapers of the United States. (3 cred.; jr., sr., grad.; prereq. 15 cred. in the social sciences; II MTWThF; 311MurH) Park
- 177.\* Freedom of the Press and Communications Law.** The Anglo-American concept of freedom of speech and press, its development under the Constitution of the United States, and the areas of tension today. (3 cred.; jr., sr., grad.; I MTWThF; 311MurH) Gerald

- 210.\* **Research in Communications Problems.** Individual research in historical or contemporary phases of newspaper, magazine, radio, or advertising fields. (3 cred.; prereq. grad. standing and consent of director of the school; ar.; ar.) Ar.

### LATIN

See Classics, pages 24 and 25.

### MARRIAGE AND FAMILY LIFE EDUCATION

See pages 86 and 92.

### MATHEMATICS

In addition to the following list of courses, the Department of Mathematics will consider offering other courses, such as 8, Commerce Algebra, first term, and 20, Mathematics of Investment, second term, if there is sufficient demand for them. Written requests for courses should be mailed directly to the Department of Mathematics, 119 Folwell Hall, University of Minnesota, Minneapolis 14, before June 1, 1953; decisions as to giving them will be available at the time of registration.

#### *First Term*

1. **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. one year 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 and to other students who obtain permission from the department; I-II MTWThF; 105F) Zink
6. **Trigonometry.** A treatment of logarithms and plane trigonometry. (5 cred.; all; prereq. plane geometry and either 1 or high school higher algebra; open for credit even to students offering high school trigonometry for entrance; I-II MTWThF; 104F) Hafstrom
15. **Elementary Mathematical Analysis I.** This, together with 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. plane geometry and either 1 or high school higher algebra; III-IV MTWThF; 105F) Gibbens
50. **Calculus I: Differential Calculus.** Includes derivatives and differentials of elementary functions; curve tracing; definitions of velocity, acceleration, etc.; maxima and minima; related rates; mean value theorems; indeterminate forms; infinite series; expansions of functions. (5 cred.; jr., sr.; prereq. 30; III-IV MTWThF; 104F) Carlson
- 114.\* **The Mathematics of Small Vibrations.** A study of the mathematics pertaining to certain problems of vibration. Topics include free and forced vibrations, damped oscillation, steady solutions, Fourier series, and the differential equations of Bessel, Laplace, and Legendre. (3 cred.; jr., sr., grad.; prereq. 51; II MTWThF; 102F) Kalisch
- 121.\* **Mathematical Theory of Statistics I.** This course, together with 122, treats correlation, distribution functions and related parts of the theory of probability, introduction to sampling theory, tests of significance. (3 cred.; jr., sr., grad.; prereq. 51; II MTWThF; 101F) Loud
- 131.\* **Advanced Algebraic Theory.** A study of the properties of polynomials, determinants, matrices, linear transformations, and quadratic forms. (3 cred.; jr., sr., grad.; prereq. 51; IV MTWThF; 102F) Kalisch

- 176.\* Intermediate Differential Equations.** Topics in differential equations not contained in a first course but not requiring a broad background of analysis. Emphasis on linear equations of second order of interest in physics. Normal form, adjoint equations, series solutions, equations of Fuchsian type, hypergeometric, Bessel, and Legendre equations. (3 cred.; jr., sr., grad.; prereq. 106; I MTWThF; 102F) Hatfield
- 178.\* Probability.** Elementary principles of probability, total and compound probability, expectation, repeated trials, Stirling's formula, the probability integral, geometrical probability, probability of causes, Bayes' theorem, errors of observation, principle of least squares. (3 cred.; jr., sr., grad.; prereq. 51; III MTWThF; 102F) Hatfield

### Second Term

- 6. Trigonometry.** (See first term) (I-II MTWThF; 105F) Bohn
- 7. College Algebra.** Selected topics in algebra commencing with quadratic equations and extending through the theory of equations, probability, and determinants, omitting logarithms. (5 cred.; all; prereq. 1 or high school higher algebra; III-IV MTWThF; 101F) Hafstrom
- 16. Elementary Mathematical Analysis II.** (See 15, first term) (5 cred.; all; prereq. 15; III-IV MTWThF; 105F) Olmsted
- 30. Analytic Geometry.** A study of geometry by means of algebra. Topics included: Cartesian and polar coordinates, straight lines, circles, conic sections, loci of given equations, equations of given loci, solid analytic geometry. (5 cred.; all; prereq. 6 and 7, or 6 and 8, or 15 and 16; III-IV MTWThF; 104F) Lewis
- 122.\* Mathematical Theory of Statistics II.** (See 121, first term) (3 cred.; jr., sr., grad.; prereq. 121; II MTWThF; 101F) Gelbaum
- 124.\* Foundations of Calculus.** A study of the ideas underlying differential and integral calculus, with special attention to those concepts and theorems which are essential to a logical development of the subject but which are usually assumed or neglected in a first course. (3 cred.; jr., sr., grad.; prereq. intermediate calculus; IV MTWThF; 102F) Nering
- 149.\* Laplace Transforms.** The simpler properties and applications of the Laplace Transform; solution of linear differential and integral equations; problems in vibration and flow of heat; physical problems whose solutions are determined in striking fashion by the Laplace Transform. (3 cred.; jr., sr., grad.; prereq. 51; I MTWThF; 101F) Gelbaum
- 188.\* Topics in Topology.** Elementary and intuitive concepts associated with typical curves and surfaces. Construction of models. Some aspects of four-dimensional space and its relation to "everyday" space. (3 cred.; jr., sr., grad.; prereq. 51; III MTWThF; 102F) Nering

## MUSIC

### First Term

- A. Piano.** (No cred.; for students without entrance requirements in piano; no prereq.; two lessons a week; ar.; 107Sch) Kendall, Rymer
- D. Voice.** (No cred.; for students without entrance requirements in voice; no prereq.; two lessons a week; ar.; 107Sch) Hull, Schuessler
- 1. Fundamentals of Music.** (2 cred.; nonmusic majors—primarily child welfare and elementary teachers; no prereq.; IV MTWThF; 4ScH) Kendall
- 7. Ear Training.** Résumé of aural work included in Music Theory 1T-6T, with concentration on its application. (3 cred.; prereq. consent of instructor; no credit allowed if comparable course taken in regular academic year; I and IV MTWThF; 103Sch) George

10. **Introduction to Music.** A lecture and laboratory course introducing the student to the basic elements of music, such as notation and the characteristics of musical tone, together with a study of fundamental musical concepts of rhythm, melody, harmony, polyphony, and form. These musical concepts will be demonstrated by recordings and performance of music of all types in western civilization. This course together with Art 1 and Philosophy 4 forms a sequence in Fine Arts. (4 cred.; no prereq.; VI-VII MTWThF; 3ScH) McConkie
11. **Piano.** Two lessons a week. (2 cred.; ar.; 107ScH) Kendall, Rymer
12. **Voice.** Two lessons a week. (2 cred.; ar.; 107ScH) Hull, Schuessler
13. **Violin.** Two lessons a week. (2 cred.; ar.; 107ScH) Cullen
- 13B. **Violin.** Two lessons a week. (2-4 cred.; ar.; 107ScH) Druian
14. **Viola.** Two lessons a week. (2 cred.; ar.; 107ScH) Barton
15. **Cello.** Two lessons a week. (2 cred.; ar.; 107ScH) Jamieson, Meltzer
16. **Double Bass.** Two lessons a week. (2 cred.; ar.; 107ScH) Fitch
17. **Flute.** Two lessons a week. (2 cred.; ar.; 107ScH) Arnegard, Winkler
18. **Oboe.** Two lessons a week. (2 cred.; ar.; 107ScH) Angelucci
19. **Clarinet or Saxophone.** Two lessons a week. (2 cred.; ar.; 107ScH) Fitch, Handlon
20. **Bassoon.** Two lessons a week. (2 cred.; ar.; 107ScH) Santucci
21. **Trumpet.** Two lessons a week. (2 cred.; ar.; 107ScH) MacKay
22. **French Horn.** Two lessons a week. (2 cred.; ar.; 107ScH) Linder
23. **Trombone.** Two lessons a week. (2 cred.; ar.; 107ScH) MacKay
24. **Tuba.** Two lessons a week. (2 cred.; ar.; 107ScH) MacKay
25. **Percussion.** Two lessons a week. (2 cred.; ar.; 107ScH) Denecke
26. **Harp.** Two lessons a week. (2 cred.; ar.; 107ScH) Miller
27. **Organ.** Two lessons a week. (2 cred.; ar.; 107ScH) Ar.
- 31A. **Music Literature.** (3 cred.; all; no prereq.; II MTWThF; 104ScH) Downes
- 60B,61B,62B. **Instrumental Ensemble.** (2 cred.; jr., sr.; prereq. consent of instructor; VII-VIII MWF; 104ScH) Druian
103. **Comparative Harmony.** A survey of the systems of harmonic theory and analysis from Rameau to the present, and a comparison and evaluation of the techniques of presentation utilized in the organization of the harmonic systems studied. (4 cred.; jr., sr., grad.; prereq. 6T or theory placement test; II-V MTWThF; 103ScH) George
- 106A. **American Music.** (3 cred.; sr., grad.; prereq. consent of instructor; III MTWThF; 104ScH) McConkie
125. **History of Opera.** (9 cred.; jr., sr., grad.; prereq. 9 cred. in either History of Music, History of Art, History of the Theatre, European History from 1600, or consent of instructor; VI MTWThF; 104ScH) Downes
- 127-128-129. **Composition.** (2 cred.; sr., grad.; prereq. 97-98-99 and 121-122-123; IV MTWThF; 2ScH) McConkie
134. **International Music Festivals.** An intensive and comparative study of music history and literature in performance at the international music festivals in Europe. (3-12 cred.; jr., sr., grad.; prereq. 6 cred. in either Music Literature, Introduction to Music, History of Music, History of the Theatre, European History from 1600, or consent of instructor; ar. [See page 6]) Oberg
204. **Graduate Applied Music.** (3 cred.; prereq. placement test by Music Dept. staff; ar.; 107ScH) Ar.
- 212.\* **Special Problems.** (3 to 9 cred.; grad.; prereq. 202 or 211; VII TTh; 2ScH) Downes
- 227-228-229. **Seminar in Composition and Orchestration.** (3 cred.; grad.; prereq. consent of instructor; III MTWThF; 102ScH) George

**Second Term**

- A. Piano.** (See first term) Stephens  
**D. Voice.** (See first term) Carapetyan  
**8. Harmony.** Résumé of part writing and harmonization of chorales which are included in Music 1T-6T with concentration on their application. (3 cred.; prereq. consent of instructor; no credit allowed if comparable course taken in regular academic year; I and V MTWThF; 103ScH) Fetler  
**11. Piano.** (See first term) Stephens  
**12. Voice.** (See first term) Carapetyan  
**13. Violin.** (See first term) Cullen  
**13B. Violin.** (See first term) Druian  
**14. Viola.** (See first term) Barton  
**15. Cello.** (See first term) Jamieson, Meltzer  
**16. Double Bass.** (See first term) Fitch  
**17. Flute.** (See first term) Arnegard, Winkler  
**18. Oboe.** (See first term) Angelucci  
**19. Clarinet or Saxophone.** (See first term) Fitch, Handlon  
**20. Bassoon.** (See first term) Santucci  
**21. Trumpet.** (See first term) MacKay  
**22. French Horn.** (See first term) Linder  
**23. Trombone.** (See first term) MacKay  
**24. Tuba.** (See first term) MacKay  
**25. Percussion.** (See first term) Denecke  
**26. Harp.** (See first term) Miller  
**27. Organ.** (See first term) Ar.  
**43B. University Chorus.** (1 cred.; prereq. consent of instructor; VII MTWThF; 4ScH) Carapetyan  
**60B,61B,62B. Instrumental Ensemble.** (See first term) (VII-VIII MWF; 104ScH) Druian  
**76. Form and Analysis.** (3 cred.; jr., sr.; prereq. 6T; I MTWThF; 104ScH) Stephens  
**102. Problems in Counterpoint.** A systematic approach to strict counterpoint, sixteenth-century counterpoint, and canon and fugue; writing of exercises as well as analysis of contrapuntal music in these styles. (4 cred.; jr., sr., grad.; prereq. Music 6T or theory placement test; II-III MTWThF; 103ScH) Fetler  
**104A. American Music.** (See 106A, first term) (IV MTWThF; 104ScH) Oberg  
**127-128-129. Composition.** (See first term) (IV TTh; 103ScH) Fetler  
**134. International Music Festivals.** (See first term) Oberg  
**140. Chorus Production.** (3 cred.; sr., grad.; prereq. must also register for 43B; VI MTWThF; 4ScH) Carapetyan  
**204. Graduate Applied Music.** (See first term) Ar.  
**209-210-211. Advanced Topics.** (3 cred.; grad.; III MTWThF; 104ScH) Oberg  
**212.\* Special Problems.** (See first term) (V TTh; 104ScH) Oberg  
**227-228-229. Seminar in Composition and Orchestration.** (See first term) (IV MWF; 103ScH) Fetler

**NATURAL SCIENCE**

See General Studies, page 28.

**PERSONAL ORIENTATION**

See General Studies, pages 29 and 30.

## PHILOSOPHY

*First Term*

1. **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.; soph., jr., sr.; no prereq.; I MTWThF; 202WeH) Hospers
2. **Logic.** A study of the difference between logical and fallacious reasoning; the functions and uses of language; rules of good definition and sound argument. (3 cred.; soph., jr., sr.; no prereq.; II MTWThF; 202WeH) Shaw
50. **History of Philosophy (Ancient).** A survey of Greek philosophy from Thales to (and including) Aristotle. (3 cred.; soph., jr., sr.; no prereq.; III MTWThF; 113JohH) Shaw
113. **Kierkegaard and Scandinavian Philosophy.** A study of the philosophical tradition in the Scandinavian countries with special reference to Kierkegaard and his significance. (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor; II MTWThF; 113JohH) Holmer
159. **Esthetics.** The nature of the esthetic experience; standards of esthetic evaluation; the relation of art to nature; the status of subject matter in the arts; the relation of form and content; the concepts of representation, expression, style, meaning, and truth in the arts; the use of symbols in art; the relation of the arts to knowledge, and to society; the relation of esthetics to ethics. (3 cred.; jr., sr.; no prereq.; III MTWThF; 202WeH) Hospers
182. **Philosophy of Religion.** Discussion of the ground and sanctions of religion, according to various philosophies. (3 cred.; jr., sr., grad.; prereq. 6 cred.; IV MTWThF; 202WeH) Holmer

*Second Term*

2. **Logic.** (See first term) (II MTWThF; 113JohH) Raab
3. **Ethics.** An examination of the problems which arise when human beings attempt to think systematically about conduct and values (are there absolute standards? the problem of free will), and a survey of historical views about the right and the good. (3 cred.; soph., jr., sr.; no prereq.; III MTWThF; 202WeH) Terrell
52. **History of Philosophy (Modern).** (3 cred.; jr., sr.; no prereq.; I MTWThF; 202WeH) Beck
114. **American Philosophy from Puritanism to Pragmatism.** (3 cred.; jr., sr., grad.; especially for students of American history and literature; II MTWThF; 202WeH) Brodbeck
135. **Philosophy in Modern Literature.** A survey of basic philosophical ideas in modern civilization as they are expressed in major works of literature. (3 cred.; jr., sr., grad.; no prereq.; IV MTWThF; 202WeH) Terrell
153. **Philosophy of Science.** An attempt to provide a clear understanding of the meaning, methods, and implications of modern science through the examination of basic concepts, presuppositions, and procedures. The topics include description, explanation, prediction, experimentation; space, time, number, matter, energy; causality, probability, statistics; organic life, evolution, mind. (3 cred.; jr., sr., grad.; prereq. 2 or consent of instructor; III MTWThF; 206WeH) Beck

## PHYSICAL EDUCATION FOR WOMEN

The following courses may be taken for elective credit in the College of Science, Literature, and the Arts:

First term: Phys.Ed. 5, 18, 33, 37.

Second term: Phys.Ed. 12.

See pages 102-104.

## PHYSICS

### First Term

1. **Introduction to Physical Science.** Mechanics and heat. Lectures and experimental demonstrations. (3 cred.; all; prereq. high school algebra and plane geometry; lect. I MTWThF; 133Ph) Valasek
- 1a. **Introduction to Physical Science.** Mechanics and heat. Lab. (two 2-hr. periods) included. May be applied toward group requirements in SLA. (4 cred.; all; prereq. high school algebra and plane geometry) Valasek  
Lect. I MTWThF, 133Ph      Lab. 1, III-IV TTh, ar.  
2, VI-VII MW, ar.
13. **General Physics for Engineers, Part I.** Third quarter of sequence. Sound and light. Lab. (one 2-hr. period) included. (2½ cred.; all; prereq. 11 and 12 or equivalent and registration in analytical geometry) Valasek  
Lect. and quiz III MTWThF, 166Ph  
Lab. 1, I-II T, ar.      Lab. 3, VI-VII W, ar.  
2, I-II W, ar.      4, VI-VII T, ar.

### Second Term

2. **Introduction to Physical Science.** Electricity and magnetism. (See 1, first term) (3 cred.; lect. I MTWThF; 133Ph) Rassweiler
- 2a. **Introduction to Physical Science.** Electricity and magnetism. (See 1a, first term) Lab. (two 2-hr. periods) included. (4 cred.) Rassweiler  
Lect. I MTWThF, 133Ph      Lab. 1, III-IV TTh, ar.  
2, VI-VII MW, ar.
13. **General Physics for Engineers, Part II.** (See first term) Rassweiler  
Lect. and quiz III MTWThF, 166Ph  
Lab. 1, I-II T, ar.      Lab. 3, VI-VII W, ar.  
2, I-II W, ar.      4, VI-VII T, ar.

## POLITICAL SCIENCE

### First Term

- A. **The State in the Modern World.** (Part A of A-B-C) The development, principles, structure, and operation of the modern nation state. (3 cred.; all; no prereq.; IV MTWThF; 185ForH) Turner
1. **American Government and Politics.** (Part 1 of 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. (3 cred.; all; no prereq.; III MTWThF; 180ForH) Naftalin
85. **Problems of World Politics.** The pre- and post-war political and economic situation in Southeast Asia; interests of the great powers; the cold war; evaluation of independence. (3 cred.; jr., sr.; prereq. 25 or History 1-2-3 or consent of instructor; II MTWThF; 55ForH) Mills
108. **Legislative Organization and Procedure.** A study of Congress and the state legislatures at work. (3 cred.; jr., sr., grad.; prereq. 6 cred.; III MTWThF; 150ForH) Short
121. **Municipal Administration.** Forms of administrative organization; personnel; purchasing; budgeting, accounting, and reporting; records and accounts; finance. (3 cred.; jr., sr., grad.; prereq. 120 or consent of instructor; I MTWThF; 140ForH) Ludwig
124. **Recent Social Legislation.** Federal, state, and local programs in the field of public assistance and social security, with particular emphasis on the major programs of the Social Security Act, health insurance, and housing. (3 cred.; jr., sr., grad.; prereq. 6 cred.; II MTWThF; 120ForH) Christensen

155. **Latin-American Government.** An analysis of the factors that have conditioned the constitutional and political organization in Latin America; the structure and operation of government in Argentina, Brazil, Chile, and Mexico. (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; IV MTWThF; 115ForH) Christensen
162. **Recent Political Thought.** An analysis and criticism of major currents of thought from Karl Marx to the present day, with emphasis on European theories: socialism, communism, legal theory, pluralism, Roman Catholic and Protestant theory, fascism and national socialism, anarchism and syndicalism, "utopian" speculation. (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; IV MTWThF; 120ForH) Sibley
195. **Colonial Government and the Problems of Imperialism.** Motives of American, British, Dutch, French, and Spanish colonization; ancient and modern imperialism. (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; III MTWThF; 120ForH) Mills
207. **Seminar in Theories of Law and Politics.** (3 cred.; grad. only; prereq. 9 cred. or 12 cred. in social science, or consent of instructor; first meeting of class 3:00 Tues., subsequent meetings to be arranged) Sibley

### Second Term

- B. The State in the Modern World.** (Part B of A-B-C) (See A, first term) (3 cred.; IV MTWThF; 75ForH) McClosky
1. **American Government and Politics.** (See first term) (II MTWThF; 180ForH) McLaughlin
2. **American Government and Politics.** (Part 2 of 1-2-3) Organization of national, state, and local government; legislative, executive, and judicial branches and their procedures. (3 cred.; all; no prereq.; I MTWThF; 85ForH) Warp
136. **The Administration of Justice.** A survey of the organization, personnel, and procedure for the administration of civil and criminal justice in the United States. Special attention is given to such conditioning factors as civil rights, public opinion, personality, environment, and culture, and to recent developments and movements intended to improve the efficiency of law enforcement and adjudication. (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; III MTWThF; 150ForH) Warp
143. **Government of the USSR and Adjacent States.** (3 cred.; jr., sr., grad.; prereq. 6 cred.; II MTWThF; 150ForH) McClosky
178. **Foreign Relations Agencies and Methods.** A rapid survey of the organization, functions, and problems of principal agencies in the United States concerned with formulation of foreign policy and administration of foreign relations; the Department of State, the Foreign Service, presidential and congressional functions. (3 cred.; jr., sr., grad.; not open to students who have completed 175 or 176; no prereq.; IV MTWThF; 160ForH) McLaughlin

## PSYCHOLOGY

### First Term

- 1-2.† **General Psychology.** An introductory survey of psychology; its materials, fundamental laws, applications, and relations to other sciences. (6 cred.; soph., jr., sr.; no prereq.; II-III MTWThF; 102FraH) Russell
- 4-5.† **Introductory Laboratory Psychology.** Simple experiments illustrating 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. general psychology; I-III MTWThF; 211Psy) Phillips

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

90. **Readings in Psychology.** (Cred. ar.; jr., sr.; prereq. 1-2 and 3 additional cred. and written consent of instructor; hrs. ar.) Rosen and others.
- 125-126.¶ **Psychology of Individual Differences.** Quantitative studies of such factors as age, sex, race, and nationality, physical traits, family heredity, and environment in the causation of individual differences in abilities and temperament. (6 cred.; sr., grad.; prereq. 1-2, 4-5, or 5 cred. in statistics; II-III MTWThF; 201WuH) Jenkins
127. **Projects in the Psychology of Individual Differences.** (3 cred.; sr., grad.; primarily for majors in Sequence C; prereq. 125-126; hrs. ar.) Rosen and others
- 144-145.† **Abnormal Psychology.** Normal and abnormal behavior contrasted. Emphasis on the dynamics, and particularly the social determinants, of personality maladjustments. (6 cred.; jr., sr., grad.; prereq. 9 cred. in psychology or 6 cred. in psychology and either Zoology 1-2-3 or 12 cred. in social science; II-III MTWThF; NHAud) Bird
- 171-172.† **Clinical Psychology.** A survey of the methods of clinical psychology emphasizing basic concepts and research problems, especially in a psychiatric setting. Topics include the theory of diagnosis, the history and mental status, structured tests, the major diagnostic groups, psychological deficit, prediction, psychotherapy, and interprofessional relations. (6 cred.; sr., grad.; prereq. 145 and a course in mental measurements or statistics. Students intending to use this course professionally should postpone taking it until they are in the Graduate School; II-III MTWThF; 115Psy) Schofield
185. **Clinical Interviewing.** Analysis of the motivations, purposes, and effects of interviewer and interviewee behavior in diagnostic and therapeutic interviews. Consideration of the theories of personality implicit in various types of interviews. This course does not involve field work in diagnostic and therapeutic interviewing. (3 cred.; sr., grad.; prereq. 171-172 or concurrent registration in 171-172; IV MTWThF; 115Psy) Rosen
210. **Research Problems.** Laboratory investigations. (Cred. ar.; grad. students only; hrs. ar.) Rosen and others
250. **Topics in Psychology.** (Cred. ar.; grad. students only, with consent of instructor; hrs. ar.) Rosen and others

### Second Term

- 1-2.† **General Psychology.** (See first term) (II-III MTWThF; 2P) McMurdo
- 4-5.† **Introductory Laboratory Psychology.** (See first term) (II-IV MTWThF; 211Psy) Helmstadter
90. **Readings in Psychology.** (See first term) Longstaff
111. **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. general psychology; I MTWThF; 102FraH) Heron
127. **Projects in the Psychology of Individual Differences.** (See first term) Longstaff
128. **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. general psychology; III MTWThF; 115Psy) Heron

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

¶ 126 may not be taken until after completion of 125.

156. **Psychology of Advertising.** Psychological analysis of the basic principles underlying advertising and selling. Consumer research is stressed. Research techniques for investigating advertising problems and the analysis of consumer wants are considered in detail. (3 cred.; jr., sr.; prereq. 1-2 and principles of economics; III MTWThF; 202WuH) Longstaff
210. **Research Problems.** (See first term) Longstaff and others
250. **Topics in Psychology.** (See first term) Longstaff and others

## ROMANCE LANGUAGES

### First Term

#### FRENCH

1. **Beginning French.** (5 cred.; all; no prereq.; I-II MTWThF; 202F) Ar.
- 3-4. **Intermediate French.** (Students receive credit either for 3 or for 4) (5 cred.; all; prereq. 2 or 3 or two or three years of high school French; I-II MTWThF; 201F) Ar.
55. **French Conversation.** Equivalent to 55s. (2 cred.; jr., sr.; prereq. 4; I TWThF; 203F) Nahas
76. **French Civilization and Culture.** (Course conducted in French) Equivalent to 76w. (2 cred.; jr., sr.; prereq. 3-4; II TWThF; 302F) Carduner
- 116.\* **Seventeenth-Century French Literature: Theater.** Equivalent to 116w. (2 cred.; jr., sr., grad.; prereq. Survey of French Literature or equiv.; III TWThF; 307F) Virtanen
- 158.\* **Contemporary French Literature: Gide, Valéry, Proust.** (Course conducted in French) Equivalent to 158f. (2 cred.; jr., sr., grad.; prereq. Survey of French Literature or equiv.; IV TWThF; 307F) Virtanen

#### MAISON FRANCAISE†

22. **Practical French Conversation.** (Offered only in French House) The primary purpose of this course is to build a practical vocabulary and to give the students an opportunity to use it appropriately in small drill sections under the guidance of native instructors. (5 cred.; prereq. 1-2 or equiv.) Carduner and staff
58. **Advanced Practical French Conversation.** (Offered only in French House) In this course, the students will acquire fluency by presenting short oral reports and participating in debates, etc. They will be divided into small groups under the guidance of native instructors. (5 cred.; prereq. 3-4 or equiv.) Carduner and staff
- 109a. **Oral Diction.** (Offered only in French House) The purpose of this course is to enable advanced students to acquire a finer feeling for the language, a sense for shades of expression, a knowledge of specialized and technical vocabulary, and a complete mastery of certain grammatical and idiomatic difficulties. (4 cred.; prereq. consent of instructor) Carduner and staff

#### SPANISH

1. **Beginning Spanish.** (5 cred.; all; no prereq.; III-IV MTWThF; 202F) Ar.
- 3-4. **Intermediate Spanish.** (Students receive credit either for 3 or for 4) (5 cred.; all; prereq. 2 or 3 or two or three years of high school Spanish; III-IV MTWThF; 201F) Grismer
56. **Phonetics and Diction.** Equivalent to 56s. (2 cred.; jr., sr.; prereq. 20 or 53 or consent of instructor; IV TWThF; 203F) Floripe
73. **Latin-American Civilization and Culture.** (Course conducted in Spanish) (2 cred.; jr., sr.; prereq. 4 or equiv.; III TWThF; 203F) Cúneo

† See Modern Language Institute, page 7.

- 165.\* **Great Figures of Spanish Literature.** The hero, el Cid Ruy Dfaz; the bawd, la Celestina; the waif, Lazarillo de Tormes; the idealist, Don Quijote; the realist, Sancho Panza; the libertine, Don Juan; the romantic, Don Alvaro; the bigot, Doña Perfecta. (2 cred.; jr., sr., grad.; prereq. Survey of the Literature of Spain or consent of instructor; II TWThF; 203F) Grismer
259. **Directed Readings in Spanish.** (Cred. ar.; grad.; prereq. consent of instructor; ar.; ar.) Grismer

#### CASA HISPANICA¶

22. **Practical Spanish Conversation.** (Offered only in Spanish House) This course is intended for students who understand Spanish fairly well but need assurance in self-expression and a basic active vocabulary. Students divided into small groups will devote all their time to practical conversation under the guidance of native instructors. (5 cred.; all; prereq. 1-2 or equiv.) Cúneo and staff
58. **Advanced Practical Spanish Conversation.** (Offered only in Spanish House) This course is intended primarily to develop self-confidence in expressing ideas in Spanish. The students will be divided into small groups for conversation on assigned topics, informal debates and oral reports on current events, political and economic life, and development in Latin America and Spain. (5 cred.; all; prereq. 3-4 or equiv.) Cúneo and staff
- 109a. **Oral Diction.** (Offered only in Spanish House) The purpose of this course is to study Spanish expression and enable advanced students and especially teachers of Spanish to acquire a finer feeling for the language and a mastery of certain grammatical and idiomatic difficulties. (4 cred.; jr., sr., grad.; prereq. consent of instructor) Cúneo and staff

#### Second Term

##### FRENCH

2. **Beginning French.** (5 cred.; all; prereq. 1 or one year of high school French; I-II MTWThF; 202F) Ar.
- 120.\* **Eighteenth-Century French Literature: Rousseau.** (2 cred.; jr., sr., grad.; prereq. Survey of French Literature or equiv.; IV TWThF; 203F) Clefton
259. **Directed Readings in French.** (Cred. ar.; grad.; prereq. consent of instructor; ar.; ar.) Clefton

#### SCHOOL OF SOCIAL WORK

##### First Term

- Soc.91. **Case Method Applied to the Study of Human Problems.** (See Sociology, page 45) Cohn
- C.W.141. **Behavior Problems in Older Children.** (See Institute of Child Welfare, page 111) Ar.
205. **Special Topics—International Understanding Through Social Welfare.** An examination of social welfare programs that may serve as instrumentalities for improving international relationships. (3 cred.; grad.; no prereq.; I MTWThF; 175ForH) Boehm
- 213.† **Field Work.** Clinical instruction in social work process under tutorial supervision. (3-9 cred.; grad.§; prereq. 220 or 282A; ar.) Boehm

† In Summer Session credit toward 210-211-212, 215-216-217 may be taken under number 213-214.

§ Admission on consultation with a social work adviser.

¶ See Modern Language Institute, page 7.

- 293.\* **Special Studies in Social Work.** Supervised experience in research on an independent project to be offered for fulfillment of degree project requirements for the MSW degree. (1-9 cred.; grad.§; prereq. 45 grad. cred. in social work) Boehm
- 300.\* **General Seminar in Social Work.** (3 cred.; grad.§; VII MTWThF; 467ForH) Boehm

### Second Term

- C.W.140. **Behavior Problems in Younger Children.** (See Institute of Child Welfare, page 111) Blodgett
206. **Special Topics—Group Process in Learning.** A course for teachers and informal education leaders focused on the contribution of social group work to the learning process. (3 cred.; grad.; no prereq.; I MTWThF; 170ForH) Pernell
- 214.† **Field Work.** (See 213, first term) (3-9 cred.; grad.§; prereq. 221 or 282B; ar.) Pernell
275. **Principles of Administration Applied to Social Work.** An analysis of the process of translating social policy into social services. (3 cred.; I MTWThF; 175ForH) Kidneigh
- 282A. **Principles of Group Work.** An introduction to social group work, its philosophy and method in understanding the needs of individuals in groups and the role of the group worker. (3 cred.; IV MTWThF; 175ForH) Pernell
- 293.\* **Special Studies in Social Work.** (See first term) Pernell
- 300.\* **General Seminar in Social Work.** (VII MTWThF; 467ForH) Kidneigh

## SOCIAL SCIENCE

See General Studies, pages 29 and 30.

## SOCIOLOGY

### First Term

1. **Introduction to Sociology.** A study of the characteristics of human group life. An analysis of the factors associated with the development of human group life and man's social environment; the structure of the social environment and its influence upon the individual's behavior. (3 cred.; no prereq.; II MTWThF; 155ForH) Mouratides
14. **Rural Sociology.** A presentation of factual data necessary to an understanding of the problems of rural social life. (3 cred.; no prereq.; IV MTWThF; 140ForH) Mouratides
53. **Elements of Criminology.** A general survey of the field of criminology. (3 cred.; jr., sr.; prereq. 1 or 1a; I MTWThF; 120ForH) Vold
91. **Case Method Applied to the Study of Human Problems.** The general application of the interviewing method for students who plan to work professionally in fields involving human relationships, such as social work, public health nursing, speech pathology, etc. (3 cred.; jr., sr.; prereq. 49 or consent of major adviser; IV MTWThF; 170ForH) Cohn
122. **Sociology of Conflict.** Manifest forms of antagonism among groups of persons; causes of conflict; methods of resolving through accommodation; the role of conflict and social change. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor; III MTWThF; 185ForH) Vold

† In Summer Session credit toward 210-211-212, 215-216-217 may be taken under number 213-214.

§ Admission on consultation with a social work adviser.

170. **Analytical Social Theory.** Examination of the major problems of sociological theory; survey of main types of sociological theory (positivistic, rationalistic, idealistic); study of major theoretical concepts. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor; II MTWThF; 85ForH) Martindale
172. **Backgrounds of Modern Social Thought.** Survey of major trends of social thought from the Renaissance to the nineteenth century with special attention to those factors contributing to the origin of sociology. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor; IV MTWThF; 80ForH) Martindale

### Second Term

1. **Introduction to Sociology.** (See first term) (II MTWThF; 155ForH) C. D. Johnson
49. **Social Problems.** A survey course in contemporary social problems with especial emphasis on personal demoralization and social disorganization. (3 cred.; no prereq.; IV MTWThF; 80ForH) C. D. Johnson
112. **World Population Problems.** A study of population policy, both historical and present day, in Europe, Asia, and other selected areas but with special emphasis on the United States. Some discussion is given to the field of population and power politics. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor; II MTWThF; 185ForH) Ramsey
141. **The Family.** The evolution of the family: development of family unity or disunity, the roles of the several members of the family, methods of investigation of the family. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor; I MTWThF; 185ForH) Taves
144. **Social Stratification.** Social stratification as a phase of social organization. Analysis of caste, estates, and social classes. Analysis of social stratification in contemporary societies with special reference to the United States. Socio-economic status and social stratification. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in social science, child welfare, education, philosophy, or psychology, or consent of instructor; IV MTWThF; 150ForH) Ramsey
180. **Methods of Social Research.** A survey of major methods employed in social research including a consideration of their advantages and limitations when applied to specific types of problems. (3 cred.; jr., sr., grad.; prereq. 45 or equiv.; III MTWThF; 185ForH) Haberman

## SPEECH AND THEATER ARTS

*The facilities of the University Speech and Hearing Clinic are available both terms to students desiring a personal speech or hearing analysis or wanting help with their speech or hearing problems. Interested students are invited to confer with Professor E. H. Henrikson, Director of the Speech and Hearing Clinic (Office of the Dean of Students), Room 205 Shevlin Hall.*

### First Term¶

- 1.† **Fundamentals of Speech.** Development of basic skills in speech: voice and action, oral reading, discussion, extemporaneous speaking. (3 cred.; fr., soph., jr., sr.; no prereq.) Gilkinson and staff  
 Sec. 1, I MTWThF, 306F      Sec. 2, III MTWThF, 304F
2. **Fundamentals of Speech.** (Second quarter of I-2) (3 cred.; fr., soph., jr., sr.; prereq. 1; II MTWThF; 306F) Gilkinson and staff

† Credit for Speech 1 without Speech 2 by petition only.

¶ See Workshop in High School Dramatics, page 5.

3. **Fundamentals of Speech.** (Continuation of 1-2) (3 cred.; fr., soph., jr., sr.; prereq. 1-2; II MTWThF; 306F) Gilkinson and staff
32. **Beginning Acting.** Creation and presentation of original scenes and skits. Ability to respond to the imaginative situation with sincerity, individuality, and effectiveness is stressed. (3 cred.; soph., jr., sr.; prereq. 1-2 or 5, 31; III MTWThF; 19ScH) Hartig
61. **Personal Development through Speech.** A study of behavior as indicated through speech; speech symptoms evaluation from cause and effect relations; psychologic factors in speech; analysis of individual problems of self-consciousness, stage fright; speech as a means of self-control as applied to teacher and pupil. (3 cred.; jr., sr.; prereq. 1-2 or 5, Psychology 1-2; II MTWThF; 308F) Bryngelson
83. **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 or 5, 81; III MTWThF; 306WeH) Thompson
106. **Discussion.** Cooperative thinking; recognition and definition of problems, critical analysis, examination of possible solutions. Planning, preparing for, participating in, and leading classroom, public, and radio discussions. (3 cred.; jr., sr., grad.; prereq. 1-2 or 5; III MTWThF; 305F) Smith
111. **Stage Direction.** Theory of direction and preparation of the prompt-book with exercises in blocking. (3 cred.; sr., grad.; prereq. 1-2 or 5, 31, 32-33, 34, 91-92-93 and consent of instructor; II MTWThF; 19ScH) Whiting
115. **Playwriting and Production.** Creative practice in the problems of dramatic form and content. Two original one-act plays. (3 cred.; sr., grad.; prereq. 1-2 or 5, 31, 32-33 or consent of instructor; IV MTWThF; 306WeH) Thompson
116. **Playwriting and Production.** Creative practice in the problems of dramatic form and content. One full-length play. (3 cred.; sr., grad.; prereq. 1-2 or 5, 31, 32-33 or permission of instructor; IV MTWThF; 306WeH) Thompson
- 122.\* **Introduction to Research.** Graduate research in speech: selection of topics and methods of investigation. Required of all graduate majors in speech. (3 cred.; sr., grad.; prereq. 1-2 or 5, Psychology 1-2; IV MTWThF; 308F) Gilkinson
157. **Clinical Practice in Audiology.** Supervised practice with communication problems of deaf and hard-of-hearing persons, including lipreading, auditor training, language development, speech conservation, etc. (3 cred.; prereq. 152, 153 and 155 or consent of instructor; II TTh and 4 hrs. ar. clinical practice; 106JohH) Lassman
- 162.\* **Speech Pathology.** Neurology of speech. Stuttering and its associated symptoms. Relation of sidedness and speech disorders, heredity, current theories of stuttering, types of treatment. (3 cred.; jr., sr., grad.; prereq. 2 or 5, 61, 67, 119; III MTWThF; 306F) Bryngelson
- 164-165-166.\* **Clinical Methods and Practice in Speech Pathology.** (3 cred.; sr., grad.; prereq. 1-2 or 5, 61, 67, 119, 162, 163, consult instructor; ar.) Bryngelson

*For Teaching of Speech, see Ed.C.I. 140, listed under College of Education, page 93.*

### Second Term

- 1.† **Fundamentals of Speech.** (See first term) (II MTWThF; 305F) Ziebarth and staff
2. **Fundamentals of Speech.** (See first term) (III MTWThF; 305F) Ziebarth and staff

† Credit for Speech 1 without Speech 2 by petition only.

3. **Fundamentals of Speech.** (See first term) (III MTWThF; 305F) Ziebarth and staff
33. **Beginning Acting, Creative Approach.** Continuation of creative approach plus study in stage technique and in make-up. (3 cred.; soph., jr., sr.; prereq. 1-2 or 5, 31; II MTWThF; 19ScH) Moulton
65. **Radio and Television Speech.** Speech arts and psychology of the radio. Practice, exercises, projects, and reports on problems of appeal and audience response. (3 cred.; jr., sr.; prereq. 1-2 or 5; IV MTWThF; 302MurH) Ziebarth
67. **Phonetics.** The study of English speech sounds as they occur separately and in connected speech. Strong and weak forms, stress, assimilation. Practice in ear training. (3 cred.; jr., sr.; prereq. 1-2 or 5; I MTWThF; 306F) Fletcher
71. **Play Production: Problems of Dramatic Production in the Secondary School.** Primarily for students in the College of Education. (3 cred.; jr., sr.; prereq. 1-2 or 5, 31, 32; II MTWThF; 302NH) Graham
93. **Stage Costuming.** (3 cred.; jr., sr.; prereq. 1-2 or 5, 31; III MTWThF; 302NH) Moulton
103. **Argumentation and Persuasion.** Theories of modern motivational rhetoric. Analysis of persuasive speaking; practice in preparation and delivery of oral argument. (3 cred.; jr., sr., grad.; prereq. 1-2 or 5, Psychology 1-2, 10 cred. in social science; III MTWThF; 306F) Howell
106. **Discussion.** (See first term) (IV MTWThF; 306F) Howell
- 119.\* **Introduction to Speech Correction.** Basic orientation in speech correction. Analysis of common disorders of speech, their characteristics, prevention, and elimination. Designed as a basis for more advanced study in speech pathology or for a basic understanding of the field. (3 cred.; jr., sr., grad.; prereq. 1-2 or 5; II MTWThF; 306F) Fletcher
131. **Creative Dramatics.** Studies in the principles and methods of developing original dramatizations with children. Observation of children's classes in creative dramatics. Readings, projects, term papers. (3 cred.; jr., sr., grad.; prereq. 31 or elementary education major, or consent of instructor, Ed.C.I. 63 recommended; IV MTWThF; 302NH) Graham
204. **Debate Coaching.** Study of literature concerning and methods of directing extracurricular interscholastic public speaking, discussion, and debate activities. Each seminar member directs the preparation and practice of a group of undergraduate student speakers. (2 cred.; prereq. 1-2 or 5, 101-102-103, Psychology 1-2, 10 cred. in social science; ar.) Howell

## ZOOLOGY§

### First Term

- 1.† **General Zoology.** Structure, physiology, embryology, classification, and evolution of animals. (5 cred.; all; no prereq.; lect. V MTWTh, V-VI F, B6Bo; lab. VI-VIII MTWTh, 101, 107Z) Ar.
51. **Introductory Animal Parasitology.** An elementary course dealing with parasitic protozoa, worms, and arthropods, and their relation to diseases of man and animals. (5 cred.; jr., sr.; prereq. 1-2-3 or equiv.; lect. VI MTWTh, VI-VII F, 211Z; lab. VII-IX MTWTh, 208Z) Wallace

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

§ For additional courses in the second term, see Itasca Forestry and Biological Station, page 65.

83. **Introduction to Genetics and Eugenics.** Facts and theories of heredity with special reference to man; chances of man to inherit traits; possible benefits of control by man for the betterment of himself and society. (3 cred.; jr., sr.; prereq. 1-2-3 or equiv. or 10 cred. in botany; II MTWThF; B6Bo) Ar.
100. **Zoological Techniques.** (Grad. students only) (Cred. and hrs. ar.) Staff
- 197.\* **Problems.** Advanced work in some special line. (3 cred. or more; jr., sr., grad.; prereq. Zoology 1-2-3 and special requirements; ar.) Ar.

### Second Term

- 2.† **General Zoology.** (Continuation of 1. See first term) (5 cred.; all; prereq. 1 or equiv.; lect. V MTWTh, V-VI F, B6Bo; lab. VI-VIII MTWTh, 101, 107Z) Ar.
- 198.\* **Problems.** (See 197, first term)

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

# INSTITUTE OF TECHNOLOGY

## College of Engineering†

An asterisk (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 20.)

### CIVIL ENGINEERING

#### First Term

- 23. **Summer Camp.** (Page 88) (9 cred.; prereq. 15, 16 and 22; ar.) Staff
- 31. **Stresses in Structures.** (Page 88) (3 cred.; prereq. Mathematics and Mechanics 26; lect. I MTWThF, 110Ex; lab. III-V MW, 225E) Andersen
- 32. **Design in Steel.** (Page 88) (3 cred.; prereq. 31, Draw. 23, Mathematics and Mechanics 128; lect. II MTWThF, 110Ex; lab. III-V TTh, 225E) Andersen

#### Second Term

- 33. **Design in Timber.** (Page 88) (3 cred.; prereq. 32; lect. I MTWThF, 110Ex; lab. III-V MW, 225E) Andersen
- 147. **Foundations.** (Page 89) (3 cred.; prereq. 32; II MTWThF; 110Ex) Andersen

### DRAWING AND DESCRIPTIVE GEOMETRY

#### First Term

- 4. **Engineering Drawing.** Elements of engineering graphics including the fundamentals of shape and size description and of graphical presentation of data. Sketching, lettering, applied geometry, and drafting techniques. (3 cred.; no prereq.; VI-VIII MWThF, VI-IX T; 18E) Williams
- 6. **Engineering Drawing.** Applied graphics: (a) application of theory and standard practices to working drawings; (b) the graphical approach to the solution of engineering problems. Charts, diagrams, nomographs, and graphic scales. (3 cred.; prereq. 5; VI-VIII MWThF, VI-IX T; 201E) Schuck
- 22. **Structural Detailing.** (C.E.) (Page 92) (2 cred.; prereq. 21; VI-VIII MTWTh; 201E) Schuck
- 28. **Drafting.** (Aero.E.) (Page 92) (2 cred.; prereq. 6; VI-VIII MTWTh; 18E) Williams
- 34. **Lettering.** (Page 92) (1 cred.; prereq. 4; V MW; 18E) Williams

#### Second Term

- 5. **Engineering Drawing.** Descriptive geometry; graphic solutions of space problems integrating theory with practical problems. Auxiliary views, revolution, intersections, developments, application to various types of problems. (3 cred.; prereq. 4; VI-VIII MWThF, VI-IX T; 18E) Palmer
- 10. **Solid Geometry.** (Page 92) (No cred.; prereq. plane geometry; VI MTWThF; 201E) Springer
- 21. **Drafting.** (C.E.) (Page 92) (2 cred.; prereq. 6; VI-VIII MTWTh; 18E) Palmer

† The page number in parentheses after the course title indicates the page in the *Bulletin of the Institute of Technology* for 1951-53 on which course description is given.

23. **Structural Detailing.** (C.E.) (Page 92) (2 cred.; prereq. 22; VI-VIII MTWTh; 201E) Springer  
 34. **Lettering.** (See first term) (V MW; 18E) Palmer

## ELECTRICAL ENGINEERING

*First Term*

15. **Elements of Electrical Engineering.** (Page 95) (3 cred.; prereq. 13; I MTWThF; 237EE) Caverley  
 16. **Elements of Electrical Engineering Laboratory.** (Page 95) (2 cred.; prereq. 14 and registration in 15) Caverley  
     Sec. 1, VII-IX MW, 21EE      Sec. 2, VII-IX TTh, 21EE  
 36. **Electrical Engineering Survey.** (Page 95) (3 cred.; prereq. Physics 9) Hartig, Caverley  
     Lect. II MTWTh, 138EE      Lab. 1, VI-IX M, 207cEE  
     2, VI-IX T, 207cEE

*Second Term*

37. **Electrical Engineering Survey.** (Page 95) (3 cred.; prereq. 36) Hartig  
     Lect. II MTWTh, 237EE      Lab. 1, VI-IX M, 207aEE  
     2, VI-IX T, 207aEE

## ENGLISH (ENGINEERING)

*First Term*

6. **Written and Spoken Communication.** (Page 97) (3 cred.; prereq. 5; III MTWThF; 227E) Ar.  
 85. **Advanced Technical Communication.** (Page 98) (3 cred.; prereq. 6; I MTWThF; 205E) Haga

*Second Term*

86. **Advanced Technical Communication.** (Page 98) (3 cred.; prereq. 85; I MTWThF; 205E) Lippert

## GENERAL ENGINEERING

*First Term*

70. **The Slide Rule.** (Page 98) (1 cred.; prereq. Mathematics and Mechanics 11 or 11A or registration in Mathematics and Mechanics 11A; V TTh; 106E) Schuck

*Second Term*

70. **The Slide Rule.** (See first term) (V TTh; 106E) Springer

## INDUSTRIAL ENGINEERING

*First Term*

- 90.† **Industrial Assignment, Part I.** (Page 104) (1½ cred.; prereq. registration in work-study program; ar.) Algren  
 92.† **Industrial Assignment, Part I.** (Page 104) (1½ cred.; prereq. registration in work-study program; ar.) Algren  
 94.† **Industrial Assignment, Part I.** (Page 104) (1½ cred.; prereq. registration in work-study program; ar.) Algren  
 150. **Elements of Industrial Engineering, Management.** (Page 104) (3 cred.; prereq. Mechanical Engineering 12, 13, 14; III MTWThF; 114ME) Block

† These courses carry 3 credits and will be given on a quarter basis. Credit not given for first term unless course is completed second term.

**Second Term**

- 90.† **Industrial Assignment, Part II.** (See first term) Algren  
 92.† **Industrial Assignment, Part II.** (See first term) Algren  
 94.† **Industrial Assignment, Part II.** (See first term) Algren

**MATHEMATICS AND MECHANICS***First Term*

- 12A. **College Algebra and Trigonometry II.** Proportion and variation, mathematical induction, binomial theorem, progressions. Trigonometric formulas and identities, trigonometric curves, inverse trigonometric functions, trigonometric equations, complex numbers. Theory of equations, partial fractions. (5 cred.; prereq. 11A; III-IV MTWThF; 104E) Thompson  
 13. **Analytic Geometry.** (Page 106) (5 cred.; prereq. 11A and 12A; I-II MTWThF; 104E) Fulks  
 26. **Technical Mechanics: Statics.** (Page 107) (5 cred.; prereq. 25; III-IV MTWThF; 203E) Kirmser  
 80. **Elementary Differential Equations.** (Page 106) (3 cred.; prereq. 25; III MTWThF; 205E) Milgram  
 127. **Technical Mechanics: Dynamics.** (Page 107) (5 cred.; prereq. 26; I-II MTWThF; 203E) Loye  
 128. **Strength of Materials.** (Page 108) (5 cred.; prereq. 26; III-IV MTWThF; 206E) Miller  
 141. **Materials Testing Laboratory.** (Page 108) (1 cred.; prereq. 128 or registration in 128; VI-VII MW; Ex) Miller  
 150. **Calculus III.** (Page 106) (3 cred.; prereq. 25; II MTWThF; 205E) Munro  
 154. **Vector Analysis.** (Page 106) (3 cred.; prereq. 25; III MTWThF; 215E) Munro  
 168. **Elementary Theory of Complex Variables.** (Page 106) (3 cred.; prereq. 152; IV MTWThF; 205E) Milgram

*Second Term*

13. **Analytic Geometry.** (See first term) (I-II MTWThF; 104E) Braden  
 25. **Calculus II: Integral.** (Page 106) (5 cred.; prereq. 24; III-IV MTWThF; 106E) Indritz  
 26. **Technical Mechanics: Statics.** (See first term) (III-IV MTWThF; 203E) James  
 80. **Elementary Differential Equations.** (See first term) (III MTWThF; 205E) Polansky  
 127. **Technical Mechanics: Dynamics.** (See first term) (III-IV MTWThF; 206E) Wilcox  
 128. **Strength of Materials.** (See first term) (I-II MTWThF; 203E) Doeringsfeld  
 152. **Calculus IV.** (Page 106) (3 cred.; prereq. 150; II MTWThF; 205E) Polansky

**MECHANICAL ENGINEERING***First Term*

12. **Molding and Casting Processes.** Theory and practice in melting, alloying, and casting ferrous and nonferrous metals. Theory of foundry control methods, risers, feeders, gates, and pattern design. Die casting and permanent mold casting. (2 cred.; no prereq.; lect. II TWThF, 114ME; lab. VI-VIII ThF, 70ME) Holtby

† These courses carry 3 credits and will be given on a quarter basis. Credit not given for first term unless course is completed second term.

14. **Machine Tool Operation.** Care and use of machine tools, jigs, fixtures, cutting tools, and precision measuring instruments. Fundamental operations on the lathe, drill press, shaper, and milling machine; production setups. (2 cred.; no prereq.; lect. IV MTWTh, 110ME; lab VI-VIII MT, 171ME) Crowder
24. **Elements of Machine Design.** (Page 110) (3 cred.; prereq. Mathematics and Mechanics 128; lect. I MTWTh, 302ME; lab. VI-VIII TTh, 325ME) Baillif
33. **Mechanical Engineering Laboratory I.** (Page 110) (2 cred.; prereq. 131; lect. III MW, 302ME; lab. III-IV TThF, VI-VII M, 370ME) LaJoy
- 90.† **Industrial Assignment, Part I.** (Page 110) (1½ cred.; prereq. registration in work-study program; ar.) Algren
- 92.† **Industrial Assignment, Part I.** (Page 110) (1½ cred.; prereq. registration in work-study program; ar.) Algren
- 94.† **Industrial Assignment, Part I.** (Page 110) (1½ cred.; prereq. registration in work-study program; ar.) Algren
131. **Thermodynamics.** (Page 112) (3 cred.; prereq. Mathematics and Mechanics 25, Physics 8; I MTWThF; 202ME) Ibele
160. **Heating and Ventilation.** (Page 113) (3 cred.; prereq. 132; II MTWThF; 302ME) Algren

### Second Term

22. **Mechanisms.** (Page 109) (2 cred.; prereq. 21; lect. I MW, 302ME; lab. VI-VIII MW, 325ME) Kemler
34. **Mechanical Engineering Laboratory II.** (Page 110) (2 cred.; prereq. 33 and cred. or registration in 132 and Physics 8; lect. III MW, 302ME; lab. VI-VII MTWTh, 370ME) LaJoy
35. **Mechanical Engineering Laboratory III.** (Page 110) (2 cred.; prereq. 34 or registration in 34 for work-study students; lect. IV MW, 302ME; lab. II-IV F, VI-VIII M, 370ME) LaJoy
- 90.† **Industrial Assignment, Part II.** (See first term) Algren
- 92.† **Industrial Assignment, Part II.** (See first term) Algren
- 94.† **Industrial Assignment, Part II.** (See first term) Algren
121. **Machine Design.** (Page 111) (2 cred.; prereq. 24; lect. II MW, 302ME; lab. II-IV TTh, 325ME) Palmer
141. **Heat Power Engineering.** (Page 112) (3 cred.; prereq. 132; I MTWThF; 208ME) Lee

## School of Chemistry

An asterisk (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 20.)

### INORGANIC CHEMISTRY

#### First Term

1. **General Inorganic Chemistry.** Study of the general laws of chemistry and of the nonmetals and their compounds. (4 cred.; all; no prereq.; lect. II MTWThF, 100C; rec. V T, 100C; lab. V-VII MW, ar.C) Brasted
4. **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 premedics, etc.; prereq. high school chemistry; lect. I MTWThF, 100C; rec. V Th, 100C; lab. V-VII MW, ar.C) Maynard

† These courses carry 3 credits and will be given on a quarter basis. Credit not given for first term unless course is completed second term.

6. **General Inorganic Chemistry.** Study of the general laws of chemistry and of the nonmetals and their compounds. (5 cred.; all; no prereq.; lect. II MTWThF, 100C; rec. V T, 100C; lab. V-VIII MWF, ar.C) Brasted
9. **General Inorganic Chemistry.** Study of the general laws of chemistry and of the nonmetals and their compounds. More intensive than Course 6. (5 cred.; prereq. high school chemistry; lect. I MTWThF, 100C; rec. V Th, 100C; lab. V-VIII MWF, ar.C) Maynard
11. **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. III MTWThF, 100C; rec. V M, 100C; lab V-VIII MW, ar.C) O'Brien
12. **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. III MTWThF, 100C; rec. V M, 100C; lab. V-VIII MWF, ar.C) O'Brien
- 103.\* **Advanced Inorganic Chemistry.** Atomic structure and the properties of elements based thereon. (3 cred.; jr., sr., grad.; prereq. Analytic Chemistry 1, 2, Organic Chemistry 62; lect. I MTWThF, 215C; rec. IV W, 315C) O'Brien
- 104.\* **Advanced Inorganic Chemistry.** Chemistry of the more representative elements. (4 cred. for grad., 3 cred. for undergrad.; jr., sr., grad.; prereq. Analytic Chemistry 1, 2, Organic Chemistry 62; lect. IV MTWThF, 215C; rec. I Th, 115C) Brasted
- 105.\* **Advanced Inorganic Chemistry.** Coordination compounds. (3 cred.; jr., sr., grad.; prereq. Analytic Chemistry 1, 2, Organic Chemistry 62; lect. III MTWThF, 215C; rec. V T, 215C) Maynard
- 301.\* **Research in Inorganic Chemistry.** (Cred. and hrs. ar.) Brasted, Maynard, O'Brien

### Second Term

2. **General Inorganic Chemistry.** (See 1, first term) (4 cred.; prereq. 1; lect. II MTWThF, 100C; rec. V T, 100C; lab. V-VII MW, ar.C) Pray
5. **General Inorganic Chemistry.** (See 4, first term) (4 cred.; prereq. 4; lect. I MTWThF, 100C; rec. V Th, 100C; lab. V-VII MW, ar.C) Pervier
7. **General Inorganic Chemistry.** (See 6, first term) (5 cred.; prereq. 6; lect. II MTWThF, 100C; rec. V T, 100C; lab. V-VIII MWF, ar.C) Pray
10. **General Inorganic Chemistry.** (See 9, first term) (5 cred.; prereq. 9; lect. I MTWThF, 100C; rec. V Th, 100C; lab. V-VIII MWF, ar.C) Pervier
11. **Semimicro Qualitative Analysis.** (See first term) (Lect. III MTWThF, 100C; rec. V M, 100C; lab. V-VIII MW, ar.C) Pervier
12. **Semimicro Qualitative Analysis.** (See first term) (Lect. III MTWThF, 100C; rec. V M, 100C; lab. V-VIII MWF, ar.C) Pervier
- 108.\* **Nonaqueous Systems.** (3 cred.; jr., sr., grad.; prereq. Analytic Chemistry 1, 2, Organic Chemistry 62; lect. IV MTWThF, 215C; rec. I Th, 215C) Pray
- 302.\* **Research in Inorganic Chemistry.** (Cred. and hrs. ar.) Pervier, Pray

## ANALYTICAL CHEMISTRY

### First Term

1. **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. qualitative analysis; lect., rec., quiz V-VI TTh, V F, 325C; lab. V-VIII MW, VII-VIII TTh, VI-VIII F, 310C) Herr

7. **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. qualitative analysis; lect., rec., quiz V MWF, 225C; lab. VI-VIII MWF, V-VIII TTh, 310C) Herr
123. **Advanced Analytical Chemistry.** Problems are assigned that involve special technique on more advanced theory than the basic courses. (3 cred.; prereq. gravimetric and volumetric analysis; hrs. ar.) Herr
- 301.\* **Research in Quantitative Analysis.** (Cred. and hrs. ar.) Herr

### Second Term

2. **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. qualitative analysis; lect., rec., quiz V-VI TTh, V F, 325C; lab. V-VIII MW, VII-VIII TTh, VI-VIII F, 310C) Herr
7. **Quantitative Analysis.** (See first term) (Lect., rec., quiz V MWF, 225C; lab. VI-VIII MWF, V-VIII TTh, 310C) Herr
123. **Advanced Analytical Chemistry.** (See first term) Herr
- 301.\* **Research in Quantitative Analysis.** (See first term) Herr

## ORGANIC CHEMISTRY

### First Term

- 61.† **Elementary Organic Chemistry.** (For all colleges) Discussion of important classes of organic compounds, both aliphatic and aromatic. Laboratory includes the preparation of typical substances. (4 cred.; prereq. Inorganic Chemistry 11 or 12; lect. I MTWThF, 352C; rec. II TTh, 410C; lab. II-IV MWF, 390C; lab. conf. III TTh, 410C) Fenton
101. **Intermediate Organic Chemistry.** A survey course in which are considered important topics such as unusual types of aliphatic, aromatic, and heterocyclic compounds, natural products, and industrial processes. (3 cred.; prereq. 14 cred. in organic chemistry; III MTWThF; 315C) Lauer
102. **Organic Qualitative Analysis.** (Elementary course) An introduction to the methods of organic qualitative analysis. (4 cred.; prereq. one year of organic chemistry; lect. II MW, 315C; 12 hrs. of lab. work ar.) (Limited to 20) Lauer
301. **Research and Thesis in Organic Chemistry.** (Cred. ar.; prereq. 110; hrs. ar.) Fenton, Lauer.

### Second Term

- 62.† **Elementary Organic Chemistry.** (See 61, first term) (4 cred.; prereq. 61; lect. I MTWThF, 325C; rec. II TTh, 410C; lab. II-IV MWF, 390C; lab. conf. III TTh, 410C) Noland
108. **Physical Techniques in Organic Chemistry.** Discussion of physical methods as applied to the identification and structural analysis of organic compounds. (3 cred.; prereq. 63 or equiv.; lect. I MTWThF, 315C) Fenton
139. **Advanced Organic Chemistry Laboratory Work.** Selected laboratory problems of an advanced nature, including some original work. Ability to read German is assumed. (2 to 5 cred.; prereq. 63 and 64; occasional lect. IV M or W; 315C; 12-30 hrs. of lab. work ar.) (Limited to 20) Fenton
302. **Research and Thesis in Organic Chemistry.** (Cred. ar.; prereq. 110; hrs. ar.) Fenton, Noland

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

**PHYSICAL CHEMISTRY***First Term*

- 104,105,106. **Physical Chemistry Laboratory.** (1 or 2 cred.; VI-VIII MW; 190C) Lipscomb
- 107.¶ **Elementary Physical Chemistry.** (3 cred.; primarily for premed. students; prereq. two years of college chemistry, one year of college physics; lect. I MTWTh, 410C; rec. I F, 410C; lab. VI-VIII MW, 190C) Lipscomb
301. **Research in Physical Chemistry.** (Cred. and hrs. ar.) Staff

*Second Term*

- 104,105,106. **Physical Chemistry Laboratory.** (See first term) VI-VIII MW; 190C) Lipscomb
- 108.¶ **Elementary Physical Chemistry.** (3 cred.; primarily for premed. students; prereq. 107; lect. I MTWTh, 410C; rec. I F, 410C; lab. VI-VIII MW, 190C) Lipscomb
301. **Research in Physical Chemistry.** (See first term) Staff

**School of Mines and Metallurgy****METALLOGRAPHY***First Term*

- 170,171.\* **Special Problems in Metallography.** (Page 117) (1, 2, or 3 cred.; prereq. sr. Met.E. or grad.; ar.) Ar.

*Second Term*

- 170,171.\* **Special Problems in Metallography.** (See first term)

**METALLURGY***First Term*

- 124.\* **Special Problems in Mineral Dressing.** (Page 118) (Cred. ar.; prereq. 112; ar.) Ar.
- 221.\* **Special Problems in Advanced Metallurgy.** (Page 118) (Cred. ar.; intended primarily for research work; ar.) Ar.

*Second Term*

- 124.\* **Special Problems in Mineral Dressing.** (See first term)
- 221.\* **Special Problems in Advanced Metallurgy.** (See first term)

**MINING ENGINEERING***First Term*

15. **Field Work in Surveying on the Iron Ranges of Minnesota.** (Page 119) (6 cred.; prereq. 13, 14; four weeks beginning about June 15) Lacabanne, Hartman
- 151,152,153.\* **Special Problems in Mining.** (Page 120) (Cred. ar.; prereq. 113; ar.) Ar.

*Second Term*

- 151,152,153.\* **Special Problems in Mining.** (See first term)

¶ Course 108 is a continuation of 107. The entire course 107-108 must be completed before credit will be assigned (6 credits). Grades will not be sent in at the end of the first term.

**PETROLEUM ENGINEERING**

*First Term*

155,156,157.\* **Special Problems in Petroleum Engineering.** (Page 121) (Cred. ar.; prereq. 144-145 or consent of instructor; ar.) Ar.

*Second Term*

155,156,157.\* **Special Problems in Petroleum Engineering.** (See first term)

# INSTITUTE OF AGRICULTURE

## GENERAL INFORMATION

There are many courses, primarily for graduate students, in the College of Agriculture, Forestry, and Home Economics and in the School of Veterinary Medicine. Most departments correlate thesis and problem work with work in the Agricultural Experiment Station.

Information concerning admission to the Graduate School should be obtained from the dean of the Graduate School. Students wishing information regarding courses at the graduate level should confer with the graduate staff of the department or school in which they will be working.

Undergraduate students also will find courses for their needs.

High school teachers of agriculture may take advanced courses in those agricultural fields which are applicable to the requirements of the Department of Agricultural Education (see College of Education, page 88).

The School of Home Economics will offer courses for undergraduate students and qualified graduate students the first term, as well as a workshop in household equipment. Two workshops for graduate students will be given in Home Economics Education (see pages 61 and 98).

An asterisk (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 20.)

## College of Agriculture, Forestry, and Home Economics

### AGRICULTURAL BIOCHEMISTRY

#### *First Term and Second Term*

118. **Laboratory Problems in Biochemistry.** (Page 58§) (3 to 5 cred.; jr., sr., grad.; consent of instructor; ar.; ar.) Staff
203. **Research Problems.** (Page 41†) (2 to 5 cred.; grad.; consent of instructor; ar.; ar.) Staff

### AGRICULTURAL ECONOMICS

#### *First Term*

180. **Farm Accounting.** Principles involved in keeping, supervising, and analyzing farm records. Meets for first three weeks only. (3 cred.; jr., sr., grad.; prereq. 2; I-II MTWThF with one added hour of discussion to be arranged; 311HH) Engene
200. **General Seminar in Agricultural Economics.** Special problems for individual work by qualified students. (3 cred.; grad.; prereq. consent of instructor in advance of registration; ar.) Staff

#### *Second Term*

201. **General Seminar in Agricultural Economics.** (See 200, first term) Staff

† For description see *Bulletin of the Graduate School for 1952-54.*

§ For description see *Bulletin of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine for 1951-53.*

## AGRICULTURAL EDUCATION

See Agricultural Education, College of Education, page 88.

## AGRICULTURAL ENGINEERING

*First Term*

40. **Mechanical Training.** Instruction and laboratory practice in mechanical trades, embracing rope work, belts, lacing and pulleys, cement work, soldering, electric wiring. (Limited to 30) (2 to 4 cred.; no prereq.; lect. VI TWThF, lab. ar.; 106, 20En) Dent
41. **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 the above and concentrate on those of special interest. Special attention given to practical application and features of special interest to teachers. (Limited to 30) (2 to 4 cred.; no prereq.; lect. VII TWThF, lab. ar.; 106, 20En) Dent

*Second Term*

41. **Metal Work.** (See first term) (Lect. VI TWThF, lab. ar.; 106, 20En) Dent
42. **Art Metal Work.** A course designed for persons interested in creating articles of permanent beauty and value from metals including copper, brass, steel, aluminum, silver, and plastics. Forming of plates, bowls, and trays, use of jeweler's saw in pierced work, etching, soldering, lapidary work. Making candlesticks, book ends, desk sets, lamps, and bracelets. Students may choose any project and any material. (Limited to 25) (2 to 4 cred.; no prereq.; lect. VII TWThF, lab. ar.; 106, 20En) Dent

## AGRONOMY AND PLANT GENETICS

*First Term and Second Term*

## AGRONOMY

- 201.\* **Research in Farm Crops.** (Page 45†) (Cred. ar.; grad.; prereq. 121, 123; ar.) Dunham, Schmid

## PLANT GENETICS

- 241.\* **Research in Plant Genetics.** (Page 45†) (Cred. ar.; grad.; ar.) Myers, Burnham, Rinke, Lambert, Thomas
244. **Laboratory Methods in Plant Breeding.** (Page 46†) (1½ cred.; grad.; ar.) Staff

## ANIMAL HUSBANDRY

*First Term and Second Term*

- 213.\* **Research in Animal Husbandry.** Special problems assigned to students to be worked out under the supervision of a faculty member. (3 to 5 cred.; grad.; ar.) Ferrin, Hanson, Harvey, Winters

## DAIRY HUSBANDRY

*First Term and Second Term*

- 208.\* **Research in Dairy Production.** (Page 79†) (Cred. ar.; prereq. preliminary grad. work; ar.) Fitch, Gullickson, Petersen

† For description see *Bulletin of the Graduate School* for 1952-54.

- 209.\* **Research in Dairy Manufacturing.** (Page 79§) (Cred. ar.; prereq. preliminary grad. work; ar.) Combs, Coulter, E. Thomas  
 215.\* **Research in Dairy Bacteriology.** (Page 79§) (Cred. ar.; prereq. preliminary grad. work; ar.) Olson, Jezeski

## ENTOMOLOGY AND ECONOMIC ZOOLOGY¶

### First Term

13. **Field Zoology.** Offered at Itasca Park. (2 cred.; no prereq.) Krogstad, Hofslund  
 197. **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. (Cred. ar.; jr., sr., grad.; prereq. 9 hrs. entomology, and other prescribed work; ar. CofH) Mickel, Granovsky, Hodson, Marshall, Richards, Cutkomp, Haydak, Holdaway, Smith, Beer, Barr, Cook  
 204. **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 department relative to methods of collection and preparation of material. (Cred. ar.; grad.; ar.) Mickel, Granovsky, Hodson, Marshall, Richards, Cutkomp, Haydak, Holdaway, Smith, Beer, Barr, Cook

### Second Term

197. **Introduction to Research.** (See first term)  
 204. **Research in Entomology.** (See first term)

## FORESTRY¶

### First Term

(Offered at Itasca Forestry and Biological Station. 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 arranged to occupy the student's full time for 5½ days per week. Largely field or laboratory work. In addition to the regular field work in Forestry 5 and 6, special field trips to federal, state, and private forestry operations are required. Required of all forestry students including transfer students in the Forest Management and Forestry-Wildlife Management curricula.)

2. **Important Forest Plants.** (Page 70†) (2 cred.; no prereq.) Rees  
 5. **Field Silvics.** (Page 70†) (2 cred.; no prereq.) Hansen  
 6. **Field Measurements.** (Page 70†) (2 cred.; no prereq.) Brown  
 Ent.13. **Field Zoology.** (2 cred.; no prereq.) Krogstad and Hofslund

### OFFERED ON THE ST. PAUL CAMPUS

### First Term

- 203.\* **Research Problems in Forest Management.** (Cred. ar.; grad.) Schneider, Schantz-Hansen, Hansen, Duncan, Hall, Brown  
 213.\* **Research Problems in Forest Utilization.** (Cred. ar.; grad.) Kaufert, Hossfeld, Rees

† For description see *Bulletin of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine* for 1951-53.

§ For description see *Bulletin of the Graduate School* for 1952-54.

¶ For additional courses in the second term see Itasca Forestry and Biological Station, page 65.

*Second Term*

- 204.\* **Research Problems in Forest Management.** (See 203, first term)  
 214.\* **Research Problems in Forest Utilization.** (See 213, first term)

## HOME ECONOMICS

*First Term*

- F.L.15. The Home and Its Furnishing.** Present-day problems in choice of a house; house plans as they affect family living; comparative costs and financing; selection of location; exterior and interior design; selection and arrangement of appropriate furnishings and accessories. (3 cred.; all; no prereq.; II MTWThF; 206WeH) Ludwig
- 25. Design Applied to Crafts.** Emphasis upon well-designed and suitable articles for use in dress and in the home which can be made with the equipment available in the typical home, such as leather tooling, weaving, simple metal work, ceramics, etc. (3 cred.; prereq. 21 and 22 or consent of instructor; V-VI MTWThF; 433HE) Myren
- 28. Construction and Refinishing of Home Furnishings.** Laboratory problems in refinishing and reupholstering furniture and making slip covers and draperies. Emphasis on design. Techniques suitable for homemakers, extension workers, and homemaking teachers. Students need to furnish own materials. (3 cred.; prereq. consent of instructor; I-II MTWThF; 342, 433HE) Myren
- 45. Quantity Cookery.** An application of the principles of quantity cookery and the development of skills and techniques in the organization of large scale food production for cafeterias and special meal service; study of standardized formulas and production costs. (6 cred.; soph., jr., sr.; prereq. 41; II-V MTWThF; Cafeteria) Claypoole
- 49. Household Equipment. Workshop:** June 15-July 1. Discussions; laboratory situations and field trips will be used to illustrate the principles that should guide in the selection, operation, care, and arrangement of equipment in the home. (Limited to 16) (3 cred.; soph.; prereq. Agricultural Engineering 35 or consent of instructor; II-IV MTWThF, afternoons for laboratory work and field trips; 106HE) Bonnell
- 86. Home Management Laboratory.** (Students should not register for first period class) Residence for five weeks in one of the two home management houses, with direct experience in managing and sharing the various activities and responsibilities involved in the group living of the students in residence. (4 cred.; jr., sr., open only to students registered in the regular year; prereq. 85 or parallel, 40, 41 advised, Public Health 52a,b) Jeary, Strattner
- 140. New Developments in Food Preparation.** Demonstrations, discussions, and some laboratory work illustrating recent trends in food preparation. (Limited to 20) (3 cred.; jr., sr., grad.; prereq. 40 or equiv; VI MTWThF, VII-IX T; 48, 157HE) Trammell
- 150. Textile Problems.** Opportunity for workers in secondary schools, colleges and adult classes, and other students to refresh their background in textiles and to acquire new information concerning recent and current developments in this field. Discussion adapted to the needs of the students who elect the course. Readings in current textiles literature permit individual study of selected topics with oral and written reports. (3 cred.; prereq. preliminary credits in textiles; VII-VIII MTWThF; 305HE) Knight
- 153. Recent Developments in Clothing Construction.** Discussion, demonstration, and laboratory work with emphasis on management of time and materials, including newer construction techniques. (3 cred.; jr., sr., grad.; prereq. 53 or consent of instructor; III-IV MTWThF; 304HE) Knight

172. **Current Developments in Nutrition.** Review of recent advances in nutrition and current nutrition problems. (3 cred.; prereq. previous courses in foods and nutrition; I MTWThF; 213HE) Leichsenring
180. **Home Planning and Furnishing.** Problems in planning and furnishing a home to meet family needs. Esthetic, economic, social, and managerial aspects are considered. Each student develops a plan for a house and its furnishings. Field trips. (5 cred.; jr., sr.; prereq. 27, 49, 120 advised, or consent of instructor, not open to students who have had 24 or 57, General College 16, Family Life 15; VI-VIII MTWThF; 360HE) Ludwig
184. **Home Management Principles.** A study and discussion of managerial aspects of homemaking; work simplification of household activities; financial records and budget-making for the individual and the family. (3 cred.; jr., sr., grad.; prereq. 40, 41 advised; III MTWThF; 203HE) Jeary

### Second Term

86. **Home Management Laboratory.** (See first term) Thomson, Lund.

## HOME ECONOMICS EDUCATION

See Home Economics Education, College of Education, page 98.

## HORTICULTURE

### First Term

76. **Landscape Construction and Maintenance.** (Page 79§) (3 cred.; jr., sr., grad.; prereq. 60 or 61 or consent of instructor; ar.) Phillips
- 190-191-192. **Special Problems.** (Page 132†) (2-4 cred.; prereq. consent of instructor; ar.) Staff
- 247.\* **Reports on Special Horticultural Topics.** (Page 133†) (Cred. ar., maximum 9 cred.) Staff
- 249.\* **Research in Horticultural Crop Breeding.** (Page 133†) (Cred. ar., maximum 9 cred.) Currence, Krantz, Hutchins, Wilcox

### Second Term

- 190-191-192. **Special Problems.** (See first term)
- 247.\* **Reports on Special Horticultural Topics.** (See first term)
- 249.\* **Research in Horticultural Crop Breeding.** (See first term)

## PLANT PATHOLOGY AND BOTANY¶

### First Term and Second Term

- 206.\* **Research in Plant Pathology.** (Page 170† description for 203-204-205) (Cred. ar.; grad.; PP) Stakman, J. J. Christensen, Eide, Hart, C. M. Christensen, Dosdall, Kernkamp, King
- 210.\* **Special Problems in Mycology.** (Page 170†) (Cred. ar.; grad.; prereq. 105-106-107; PP) Stakman, C. M. Christensen, Dosdall
- 257.\* **Research Problems in Applied Plant Physiology.** (Page 171†) (Cred. ar.; grad.; AgrBot) Landon
- 263.\* **Research Problems in Agricultural Botany.** (Page 171†) (Cred. ar.; grad.; AgrBot) Larson, Stakman

† For description see *Bulletin of the Graduate School* for 1952-54.

§ For description see *Bulletin of the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine* for 1951-53.

¶ For additional courses in the second term see Itasca Forestry and Biological Station, page 65.

## POULTRY HUSBANDRY

*First Term and Second Term*

- 214.\* **Research in Poultry Husbandry.** Research problems assigned to meet the needs of the student. (Cred. ar.; grad.; prereq. consent of instructor; ar.) Ar.
- 215.\* **Research in Poultry Nutrition.** (Cred. ar.; grad.; prereq. consent of instructor; ar.) Ar.
- 216.\* **Research in Poultry Breeding.** (Cred. ar.; grad.; prereq. consent of instructor; ar.) Shoffner

## RHETORIC

*First Term*

47. **Efficient Reading.** Designed for students, teachers, business or professional people of average reading ability wishing to improve speed, comprehension, and vocabulary. Techniques valuable in achieving or maintaining superior scholastic or professional status. Maximum use of recently developed visual aids. Of special value to teachers interested in laboratory-type experience in adult reading techniques. Not a remedial course. (Section limited to 30) (3 cred.; no prereq.) Brown

Sec. 1, IV MTWThF, 155ForH

Sec. 2, V MTWThF, 155ForH

*Second Term*

47. **Efficient Reading.** (See first term) (IV MTWThF; 155ForH) Wright
51. **Exposition.** Essays and articles, technical writing, application letters, review of English usage. (3 cred.; jr., sr.; prereq. satisfaction of freshman communication requirements; III MTWThF; 308En) Nichols

## SOILS

*First Term and Second Term*

168. Same as Ag.Ed. 168, see page 88. (Given first term only.)
- 202.\* **Research Problems in Soils.** (Page 195†) (2-5 cred.; grad.; prereq. consent of instructor in advance of registration; ar.) Rost, McMiller, Burson, Caldwell, MacGregor, Arneman

*Soil Microbiology—See Bacteriology and Immunology, Course 103, page 70.*

## School of Veterinary Medicine‡

All classes scheduled by arrangement

*First Term and Second Term*

104. **Special Studies in Veterinary Anatomy.** Individual problems for further study in gross anatomy, histology, embryology, neurology, hematology, and histological techniques. (1-5 cred. per term; registration for more than one term permitted; prereq. 111 or equiv. and consent of instructor) Kitchell, Weber
137. **Problems in Animal Physiology.** (Cred. ar.; jr., sr., grad.; prereq. 135 and 136 or Human Physiology 106 and 107) Sellers
157. **Veterinary Post-Mortem Pathology.** (1-3 cred.; registration for more than one term permitted; jr., sr., grad.; prereq. 153 or equiv., with consent of instructor) Sautter, Kernkamp

† For description see *Bulletin of the Graduate School* for 1952-54.

‡ Tuition fees per term in Veterinary Medicine are \$45 for resident and \$77.50 for non-resident students, and incidental fee per term is \$10.50.

158. **Veterinary Surgical Pathology.** Study of neoplasms, surgical biopsies, post-mortem material, together with a review of pertinent literature. (1-3 cred.; jr., sr., grad.; prereq. 153 and consent of instructor) Sautter, Kernkamp
201. **Advanced Animal and Poultry Pathology.** Studies of clinical material, collateral reading, and conferences. (Cred. ar.; prereq. consent of instructor) Kernkamp, Fenstermacher, Sautter
205. **Advanced Animal Bacteriology.** Studies on clinical material, collateral reading, and conferences. (Cred. ar.; prereq. consent of instructor) Pomeroy, Fenstermacher
209. **Advanced Clinical Techniques.** A more detailed application of clinical techniques in the diagnosis and therapy of animal diseases. (Cred. ar.; prereq. consent of instructor) Campbell, Mather, Hoyt, Pritchard
213. **Veterinary Obstetrics and Gynecology.** A course designed to give the student a more comprehensive training in the disorders and diseases of reproduction of domestic animals through studies on clinical material, collateral reading, and conferences. (Cred. ar.; prereq. consent of instructor) Staff
230. **Research.** (Cred. ar.) Staff

# ITASCA FORESTRY AND BIOLOGICAL STATION

## GENERAL INFORMATION

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 State Park, approximately 220 miles northwest of the Twin Cities.

These classes will be conducted cooperatively 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 20, ending August 22.

Interested students may find the following opportunities offered:

1. Elementary and advanced instruction 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.

### Admission and Registration<sup>¶</sup>

The courses are open to all qualified graduate and undergraduate students who have had usual preliminary courses in biological subjects.

Inquiries concerning the Biological Station should be directed to and reservations made through the College Office, Institute of Agriculture, St. Paul 1.

Application for admission to the Graduate School should be sent directly to the Dean of the Graduate School, University of Minnesota, Minneapolis 14. Students must make such application at least four weeks before the opening of the Biological Station Summer Session. (See also information under Graduate School, page 19.) Attention is called to the fact that, pending admission to the Graduate School, students can register as adult special students. Credit so earned may be transferred, upon petition, to a graduate record if the student is later admitted to the Graduate School. If the student is not admitted to the Graduate School the credit earned as an adult special student will not be given official validation toward a graduate degree.

*All students should make reservations* at the College Office on the St. Paul Campus. Students should note that a reservation is not registration. All *on-campus students* must complete their registration at the admissions office on either campus as early as possible but not later than July 17. Off-campus students may register upon arrival at the Biological Station on July 20 if registration before arrival is impossible.

### Fees and Expenses

Registrations will be accepted during June and July but not later than July 20. The following fees are payable by each registrant on or before July 20 and must be paid before registration is completed:

Tuition fee .....	\$50.00
Incidental fee .....	10.50
Laboratory fee .....	10.00
<b>Total fees for the term .....</b>	<b>\$70.50</b>

<sup>¶</sup> See pages 10-18 for general University of Minnesota admission.

In addition, it is estimated, on the basis of the experience of other groups of students, that board which is on a cost basis will be approximately \$60 for the five weeks. A charge of \$10 is made for room in the dormitories and cabins of the Biological Station and is to be paid to the director during the first week of the session.

Laboratory fee includes the use of microscopes, nets, boats, various class supplies, and accessories.

The estimated cost of \$140.50 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 20. After July 20 the late fee will be charged according to the following schedule:

Tuesday, July 21 .....	\$2.00
Wednesday, July 22 .....	3.00
Thursday, July 23 .....	4.00
Friday, July 24 .....	5.00

No registration will be accepted after July 24 without the approval of the professor in charge and payment of the \$5 late fee.

### Courses of Instruction†

An asterisk (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 20.)

#### Second Term

#### BOTANY

- Pl.Path.56. **Introduction to the Study of Fungi.** (Course also listed under Plant Pathology) (4 cred.; jr., sr.; prereq. 9 cred. in botany, or consent of instructor; MTh) C. M. Christensen
112. **Aquatic Flowering Plants.** (4 cred.; prereq. 10 cred. in botany or zoology, or consent of instructor; WS) Fassett
116. **Summer Flora of Minnesota.** (4 cred.; prereq. 10 cred. in botany or zoology, or consent of instructor; TF) Fassett
131. **Field Ecology.** Not offered in 1953.
136. **Organisms, Microclimate, and Weather.** (4 cred.; prereq. 10 cred. in biology, botany, or zoology, a course in physics recommended; TF) Lawrence
155. **Fresh-water Algae.** (4 cred.; prereq. 10 cred. of biology, or consent of instructor; TF) Evans
- Pl.Path.156. **Advanced Study of Fungi.** (Course also listed under Plant Pathology) (4 cred.; prereq. 9 cred. in botany, or consent of instructor; MTh) C. M. Christensen
157. **Bryophytes and Pteridophytes.** (4 cred.; prereq. 10 cred. in biology or consent of instructor; MTh) Evans
- 196.\* **Problems in Ecology, Taxonomy, Bryology, or Algology.** (Cred. ar.; advanced students with proper qualifications) Evans, Fassett, Lawrence

#### ENTOMOLOGY AND ECONOMIC ZOOLOGY

59. **Field Entomology.** (4 cred.; jr., sr.; prereq. Zoology 1-2-3 or equiv.; TF) Peterson
68. **Natural History of the Higher Vertebrates.** (4 cred.; prereq. Zoology 1-2-3 or equiv.; TF) (There will be a "cost-basis charge" for mileage on field trips) Marshall

† For detailed description of courses write to Dean of Summer Session, University of Minnesota, Minneapolis 14, for special *Bulletin of the Itasca Forestry and Biological Station.*

124. **The Biology of Immature Insects.** (4 cred.; 15 cred. in zoology and Entomology 52 or equiv. or consent of the Department of Entomology and Economic Zoology; WS) Peterson
162. **Ecology of Terrestrial Vertebrates.** (4 cred.; prereq. Entomology 68 or Zoology 57-58, and Entomology 63 or equiv. and Botany 20; MTh) (There will be a "cost-basis charge" for mileage on field trips) Marshall
- 196.\* **Special Problems in Entomology and Economic Zoology.** (Cred. ar.; advanced students with proper qualifications) Marshall, Peterson

### PLANT PATHOLOGY AND BOTANY

56. **Introduction to the Study of Fungi.** (Course also listed under Botany) (4 cred.; jr., sr.; prereq. 9 cred. in botany, or consent of instructor; MTh) C. M. Christensen
156. **Advanced Study of Fungi.** (Course also listed under Botany) (4 cred.; prereq. 9 cred. in botany, or consent of instructor; MTh) C. M. Christensen
- 210.\* **Special Problems in Mycology.** (Cred. ar.; grad.; prereq. 105-106-107) C. M. Christensen

### ZOOLOGY

55. **Natural History of Invertebrates and Fishes.** (4 cred.; prereq. Zoology 1-2-3 or equiv.) Eddy
115. **Advanced Natural History of Invertebrates and Fishes.** (4 cred.; prereq. 15 cred. in zoology) Eddy
119. **Limnology.** A study of the conditions for life in the water and distribution of aquatic animals. (4 cred.; prereq. 15 cred. in zoology) Eddy
143. **Animal Parasites.** (4 cred.; prereq. 15 cred. in zoology, or consent of instructor) Chandler
- 198.\* **Problems in Protozoology, Ecology, and Limnology.** (Cred. ar.; prereq. Zoology 1-2-3 and special requirements; advanced students) Chandler, Eddy

# MEDICAL SCHOOL

## GENERAL INFORMATION

Students in the freshman, sophomore, and junior years at the University of Minnesota Medical School are required to be in attendance during the first term of the Summer Session of 1953. Their courses are a continuation of those begun in the spring quarter and are not open to students from other institutions. For other courses offered in various departments of the Medical School attention is directed to the course listings by departments.

A student applying to register in preclinical 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 his medical school approving the purpose of the registration. Medical students from other schools, whether their purpose is make-up work or to accelerate or broaden their medical education, are registered as adult special students and receive 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 receive the degree. No obligation to accept such students for registration in the regular medical course is attached to adult special registration. They should consult the deans or department heads in their own schools as to the equivalence of the courses in which they might be interested at the University of Minnesota. (See departmental listings.)

In the *clinical departments*, instruction of junior medical students is a continuation of spring quarter courses up to the end of the first term. During the second term both sophomore and junior medical students, at their election, may continue in their clinical work as externs. Similar externship training is offered to medical students from other institutions and to practicing physicians during both first and second terms of the Summer Session. (See departmental schedules.)

The externships will offer an integrated program of bedside teaching and clinical responsibilities, ward rounds, conferences and seminars, occupying approximately three fourths of the registrant's time, on the wards of the University Hospitals, the Minneapolis General Hospital, and the Veterans Hospital, for recently graduated physicians, and qualified medical students from other institutions who are recommended by their respective deans. Registration may be for either or both terms of the Summer Session. Research opportunities may be afforded registrants who remain for both terms. At the discretion of individual clinical departments, selected registrants may remain during the month of September for additional clinical training. Since an externship will not occupy completely the registrant's time, about one fourth of this time may, if he chooses, be devoted to electives in basic sciences or in another clinical department. Medical classes of the Summer Session 1953 will begin on June 16.

### Opportunity for Practitioners

In addition to the externships which have been described above, 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 primarily for practitioners and are largely practical in nature. Circulars may be obtained from the Center for Continuation Study.

Clinics and conferences 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.

### Graduate and Special Continuation Courses

Opportunities are offered in the various departments of the Medical School for work during the Summer Session for advanced degrees, either in laboratory or clinical branches of medicine. Such work involves admission to, and registration in, the Graduate School. For detailed information see the statement under Graduate School, page 19 in this bulletin or the special bulletin on graduate work in medicine.

An asterisk (\*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 20.)

### Fees

**Medical students desiring time credit**—The Medical School tuition fee for the full summer quarter is \$90 for residents of Minnesota, and \$175 for nonresidents. Less than a full program may be paid for on a credit-hour basis, namely \$7 per credit hour (nonresidents \$14.75). In addition each student will pay the incidental fee of \$21. 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 be therefore:

	Summer Quarter	Summer Term
Tuition fee .....	\$90.00 (175.00)	\$45.00 (\$87.50)
Incidental fee .....	21.00	10.50

**Medical students or physicians registering for externships**—A tuition fee of \$45 *per term* is charged for the externships listed under the various clinical departments. This is the same for residents and nonresidents of Minnesota. No additional tuition will be charged for such electives in the basic sciences or clinical work as the registrant may have time for, not to exceed one-fourth time. Each registrant for an externship will pay the incidental fee of \$10.50 per term. In elective courses where a microscope is required this may be rented from the University.

**Nonmedical Summer Session students**—Students who do not desire to register for time credit toward a medical degree, and who are ineligible to register for an externship or for a program of clinical subjects, may pay the regular Summer Session fees (see pages 10-18) per term plus special course fees.

## ANATOMY

### First Term

#### REQUIRED COURSES

Courses 104 and 111, which are required work for freshman medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools. Graduate students who have registered for either of these courses in the spring quarter may continue by registering in the first term of the Summer Session.

#### ELECTIVE COURSES

- 150. **Special Topics in Neurology.** Study of literature on selected phases of human neurology. (Cred. ar.; prereq. 111; ar.; ar.) Larsell
- 156. **Advanced Anatomy.** Individual problems in gross anatomy, histology, hematology, or neurology. (Cred. ar.; consent of instructor; ar.; ar.) Boyden, Larsell, Hartmann, Williams
- 164. **Segmental and Topographic Anatomy of the Lungs.** (2 cred.; prereq. 101; ar.; ar.) Boyden
- 204. **Research in Anatomy.** (Gross anatomy, histology, hematology, or neurology) (Cred. ar.; consent of instructor; ar.; ar.) Boyden, Larsell, Hartmann, Williams

### Second Term

#### REQUIRED COURSES

58. **Anatomy of the Extremities.** (Enrolment limited) (3 cred.; lect. VI MTWThF, 304 IA; lab. VII MTWThF, ar.) Wells

#### ELECTIVE COURSES

156. **Advanced Anatomy.** (See first term) Wells, Sundberg  
 165. **Hematology.** For medical technologists and others. (Enrolment limited) (4 cred.; prereq. 103, 104 or equiv.; lect. II MTWTh, 304 IA; lab. III-IV MTWTh, 213 IA) Sundberg  
 204. **Research in Anatomy.** (See first term) Wells, Sundberg

### First Term and Second Term

#### ELECTIVE COURSES

- 100-101. **Gross Human Anatomy.** Dissection of lower and upper halves of body respectively. (Enrolment limited) (8 cred. each; prereq. Zoology 1-2-3 and preferably 22; lect. I MTWThF, 304 IA; lab. II-IV, VI-VII MTWThF, 306 IA) Boyden (100 or 101); Wells (101 or 100). (These two courses may be run consecutively or concurrently, depending upon number of students and their needs. Consent of head, Department of Anatomy, required before June 1)

## BACTERIOLOGY AND IMMUNOLOGY

### First Term

53. **General Bacteriology.** Lectures, demonstrations, and laboratory exercises are employed for instruction in the morphology, physiology, taxonomy, and ecology of bacteria. The practical applications of these fundamental principles in other phases of science and industry are emphasized. (5 cred.; soph. with a C average in the prerequisite courses, jr., sr.; prereq. 10 cred. in chemistry and 4 cred. in biological sciences or consent of instructor; lect. II MTWThF, 129MH; lab. III-IV MTWThF, 201MH) Johansson, Lichstein  
 103. **Soil Microbiology.** Studies of the bacteria, fungi, and actinomycetes of the soil, with emphasis on the biochemical activities of the soil microflora. (4 cred.; jr., sr., grad.; prereq. 53, 8 cred. in organic chemistry and consent of instructor; lect. I MTWThF, 103So[StP]; lab. II-III MTThF, 103So[StP]) Schmidt  
 123. **Bacterial Metabolism.** Advanced treatment of several broad aspects of metabolism including enzymes, biological energy, fermentation, respiration, nitrogen metabolism, photosynthesis. Required of all graduate students in bacteriology; open to others by permission. (3 cred.; prereq. 121-122 or equiv., introductory biochemistry; lect. VI MTWThF; 214MH) Lichstein  
 201. **Research in Bacteriology.** (Page 57¶) (Cred. and hrs. ar.) Syverton, Lichstein

### Second Term

102. **Medical Bacteriology.** (Page 15†) (5 cred.; prereq. 53; lect. VI MTWThF, 214MH; lab. VII-VIII MTWThF, 201MH) Watson, Roth  
 112. **General Mycology.** (Formerly Bact. 113) A survey of the fungi with emphasis on life cycles, physiology, morphology, ecology, and economic significance. (3 cred.; jr., sr., grad.; prereq. 53 and 15 cred. in chemistry; lect. II MTThF, 214MH; lab. III-IV MTThF, 201MH) Roth  
 201. **Research in Bacteriology.** (Page 57¶) (Cred. and hrs. ar.) Syverton, Watson

† For description see *Bulletin of the Medical School*, 1952-54.

§ Microscope required. Students may obtain use of microscope by purchasing one \$3 microscope card from the bursar.

¶ For description see *Bulletin of the Graduate School*, 1952-54.

**MEDICINE**  
**DIVISION OF INTERNAL MEDICINE**

*First Term*

**REQUIRED COURSES**

Courses 102, 104, and 111, which are required work for sophomore and junior medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

*First Term and Second Term*

**ELECTIVE COURSES**

132. **Diagnosis and Treatment of Diseases of the Lungs.** Lectures and clinics in the dispensary and on the hospital wards. Lectures with or without hospital work. (Cred. and hrs. ar.; jr., sr.; not less than 10 students) Myers
136. **The Respiratory Organs in Health and Disease.** (Cred. and hrs. ar.; jr., sr.; limited to 6 students) Myers
140. **Externship in Medicine.** Not less than 10 students; limited to 54 students. Of the total number, 15 can be taken to serve as junior clerks on each of the medical services at the University and the Minneapolis General Hospitals, and 24 to serve as senior clerks in the Medical Clinic at the University Hospitals. Applicants must have passed satisfactorily the first two years of medicine in a Class A medical school. In selecting the senior clerks to serve in the Medical Clinic at the University Hospitals, preference will be given to students who have also satisfactorily completed the third (junior) year of medicine. Watson and staff

**COURSES FOR GRADUATE STUDENTS**

201. **Clinical Medicine.** (Cred. ar.) Watson, Spink, Ebert, Flink, Hoffbauer, Nesbitt, Tucker
203. **Research in Medicine.** Watson, Spink, Ebert, Flink, Hoffbauer, Nesbitt, Schwartz, Tucker, Chapman, Thomas, Hall
205. **Tuberculosis.** Myers, Tucker
206. **Clinical Conference.** Presentation of problem cases. Discussion of diagnosis and treatment and consideration of pertinent literature. (1 cred.; 9 a.m. F) Watson, Ebert, and staff
207. **Clinical Pathological Conference.** Presentation of clinical features, necropsy findings, and discussion. Medical and surgical cases. (1 cred.; 11 a.m. W) Dawson, Watson, Wangensteen, and staff
208. **Clinical Radiological Conference.** Presentation and discussion of X-ray films, from the Medical Service, with clinical correlation. (1 cred.; 9 a.m. M) Rigler, Watson, and staff
213. **Cardiovascular Seminar.** Weekly conference on clinical cardiovascular problems, held jointly by the Departments of Medicine and Pediatrics. (1 cred.; hrs. ar.) Ebert, Thomas, Chapman, Adams, and others

**DIVISION OF DERMATOLOGY**

*First Term and Second Term*

**ELECTIVE COURSES**

- 159.† **Assistantship, Dermatology and Syphilis.** (Prereq. jr. med. clerkship; limited to 1 student; Minneapolis General Hospital) Laymon
- 160.† **Assistantship and Conference in Dermatology.** (Prereq. jr. med. clerkship; limited to 1 student; University Hospitals) Michelson and staff

† Consent of instructor required.

- 162.† **Assistantship in Dermatology.** (Prereq. 124; limited to 2 students; Minneapolis General Hospital) Laymon  
 163.† **Treatment of Syphilis.** (Limited to 2 students; University Hospitals) Michelson and staff  
 164.† **Seminar in Pathology.** Histopathology of the skin. Clinical and pathological phases will be exemplified. (Prereq. Path. 102) Michelson  
 165.† **Seminar in Dermatology.** Michelson and staff  
 166.† **Allergy and Dermatology.** (Limited to 1 student) Michelson

#### COURSES FOR GRADUATE STUDENTS

225. **Clinical Dermatology and Syphilology.** (University Hospitals) Michelson and staff  
 226. **Clinical Dermatology and Syphilology.** (Minneapolis General Hospital) Laymon and staff  
 227. **Histopathology of the Skin.** Michelson and staff  
 228. **Research in Dermatology and Syphilology.** Michelson, Laymon, and staff

#### *Second Term*

#### ELECTIVE COURSES

167. **Externship in Dermatology.** (Limited to 10 students) Michelson and staff

### DIVISION OF CLINICAL LABORATORY MEDICINE

#### *First Term and Second Term*

#### COURSES FOR GRADUATE STUDENTS

235. **Advanced Clinical Laboratory Medicine.** Evans and staff  
 236. **Research on Clinical Laboratory Problems.** Evans and staff

### OBSTETRICS AND GYNECOLOGY

#### *First Term*

#### REQUIRED COURSE

Course 124, which is required work for junior medical students, is continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

#### ELECTIVE COURSES

- 160a. **Externship in Obstetrics and Gynecology.** (Limited to 10 students) Elective for junior and senior medical students and recent graduates. Course will consist of clinical work in obstetrics and gynecology. Under exceptional circumstances investigative work can be done. Registration may be for one or both terms. (6 cred.) McKelvey and staff

#### *Second Term*

- 160b. **Externship in Obstetrics and Gynecology.** (See 160a, first term) McKelvey and staff

#### *First Term and Second Term*

#### COURSES FOR GRADUATE STUDENTS

201. **Advanced Obstetrics and Gynecology, Part I.** Required of first-year fellows. McKelvey, Sadler, Mitchell, and staff

† Consent of instructor required.

205. **Advanced Obstetrics and Gynecology, Part II.** Required of second-year fellows. McKelvey, Sadler, Mitchell, and staff
209. **Advanced Obstetrics and Gynecology, Part III.** Required of third-year fellows. McKelvey, Sadler, Mitchell, and staff
216. **Research.** Staff
303. **Obstetric and Gynecologic Histology.** (6 cred.; hrs. ar.) McKelvey and staff

## PATHOLOGY

### First Term

104. **Autopsies.** (Cred. and hrs. ar.; prereq. 102) Dawson, McCartney
106. **Diseases of the Heart.** (2½ cred.; prereq 102; 2:00-4:00 TTh) McCartney
111. **Conference on Autopsies.** (1 cred.; prereq. 102; 12:30-1:30 T; 104 IA) Dawson
- 112.† **Diagnosis of Tumors.** (2½ cred.; prereq. 102; hrs. ar.) McCartney
- 113.† **Surgical Pathology.** (2½ cred.; prereq. 102; 10:00-12:00 MTWThF) McCartney
120. **Diseases of the Lungs.** (1 cred.; prereq. 102; hrs. ar.) Dawson
201. **Research.** Students with the necessary preliminary training may elect research either as a major or minor in pathology. Permission required. (Cred. and hrs. ar.) Dawson, McCartney

### Second Term

104. **Autopsies.** (Cred. and hrs. ar.; prereq. 102) Dawson, Hebbel
111. **Conference on Autopsies.** (1 cred.; prereq. 102; 12:30-1:30 T; 104 IA) Dawson
- 112.† **Diagnosis of Tumors.** (2½ cred.; prereq. 102; hrs. ar.) Hebbel
- 113.† **Surgical Pathology.** (2½ cred.; prereq. 102; 10:00-12:00 MTWThF) Hebbel
121. **Diseases of Alimentary Tract.** (1 cred.; prereq. 102; hrs. ar.) Hebbel
201. **Research.** Students with the necessary preliminary training may elect research either as a major or minor in pathology. Permission required. (Cred. and hrs. ar.) Dawson, Hebbel

## PEDIATRICS

### First Term

#### REQUIRED COURSES

Courses 122 (2 cred.) and 124 (6 cred.), which are required work for junior medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools. Course 135 (3 cred.), which is required work for senior medical students, is continued through both terms of Summer Session. (See *Bulletin of the Medical School* for 1952-54, pages 35 and 36.)

### First Term and Second Term

#### ELECTIVE COURSES

- 152.§ **Fundamental Principles of Nutrition and Metabolism as Applied to Children.** Seminar course. (1 cred.; hrs. ar.; W205Hosp) Ulstrom, Ziegler
- 154.§ **Endocrinology as Applied to Pediatrics.** Seminar course. (1 cred.; hrs. ar.; W205Hosp) McQuarrie, Ulstrom
- 162.§ **Common Behavior Disturbances in Childhood.** Their recognition and management. (1 cred.; hrs. ar.; W600Hosp) Jensen and staff

† Second term 112 and 113 are not repetitions of the first term but rather continuations.

§ Not offered to fewer than 10 students.

- 170. Rheumatic Fever and Heart Diseases in Childhood.** (1 cred.; hrs. ar.; 3rd floor VCHH) Thomas, Good, Dwan, Anderson, Denny
- 174A. Dispensary Externship in Pediatrics.** Patients in Pediatric Dispensary are assigned to individual students for examination, treatment, and "follow-up" observation under supervision. Special clinics in well-baby care, allergy, heart, metabolism, endocrinology, convulsive disorders, cerebral palsy, and child psychiatry are attended weekly. (Limited to 10 students) (4 cred. per term; 9:00-12:00 and 1:00-3:00 MTWThF; University Hospitals and Minneapolis General Hospital) Ulstrom, Jensen, Good, Platou, Stoesser, and other senior staff members
- 174B. In-Patient Externship in Pediatrics.** Patients in the pediatric wards at the University Hospitals and Minneapolis General Hospital are assigned to individual students for clinical history, physical and laboratory diagnosis, treatment and "follow-up" observation under supervision of the pediatric and consulting staff members. (4½ cred. per term; 9:00-12:00 and 1:00-5:00 MTWThF, 8:00-12:00 S) McQuarrie, Jensen, Thomas, Good, Ulstrom, Denny and junior staff members

#### COURSES FOR GRADUATE STUDENTS

- 200. Graduate Seminar in Pediatrics.** (1½ cred.; 4:00-5:30 M; Ped.Conf.Rm.) Ziegler, McQuarrie, and senior staff
- 202. Pediatric Clinic.** (5 cred.; 9:00-12:00 MTWThF; Out-Patient Departments, Minneapolis General and University Hospitals) Jensen, Ulstrom, and junior staff
- 204. Three-Month Residence in Pediatrics at the University Hospitals or Minneapolis General Hospital.** (7 cred.; 9:00-12:00 and 1:00-5:00 MTWThF) McQuarrie, Jensen, Good, Ulstrom at University Hospitals; Dwan, Huenekens, Platou, Seham, Stoesser, Richdorf at Minneapolis General Hospital
- 208. Pediatric Research.** Special problems. Students may collaborate with members of the staff or with other students. (Cred. ar.; hrs. ar.; Ped.Labs.) McQuarrie, Thomas, Good, Jensen, Ziegler
- 210. Special Clinics in Pediatrics.** (1 cred.; Out-Patient Departments, Minneapolis General Hospital or University Hospitals) Jensen, Dwan, Stoesser, Ulstrom

### PHARMACOLOGY

#### *First Term*

##### REQUIRED COURSE

Course 102, which is required work for sophomore medical students, is continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

##### ELECTIVE COURSES

- 109. Pharmacological Problems.** (Cred. and hrs. ar.) Bieter, Wright, Cranston
- 110. Toxicology.** A study of systemic quantitative toxicological analysis. Lecture and laboratory. Lecture only may be taken if desired. (2 or 5 cred.; hrs. ar.) Wright

#### *First Term and Second Term*

- 9. Pharmacology for Nursing Students.** (2 cred.; lect. 22 hrs., VI TTh; 111 Owre) Cranston
- 203. Research in Pharmacology.** For graduate and advanced students. (Cred. and hrs. ar.) Wright, Bieter

## PHYSIOLOGICAL CHEMISTRY

*First Term*

## REQUIRED COURSE

100. **Physiological Chemistry.** (7 cred.; jr., sr.; prereq. organic and physical chemistry and physics; lect. IV MTWThF, VI MTWThF, 12 Owre; lab. I-III MTThF, 310MH) Armstrong, Barnum, Carr

## ELECTIVE COURSES

153. **Problems in Physiological Chemistry.** Special work arranged with qualified students. May be taken one or both terms. (Cred. and hrs. ar.; prereq. 100, 101) Armstrong, Barnum
205. **Research in Physiological Chemistry.** (Cred. and hrs. ar.) Armstrong, Barnum

*Second Term*

## REQUIRED COURSE

101. **Physiological Chemistry.** (6 cred.; jr., sr.; prereq. 100; lect. IV MTWThF, VI MWF, 113 Owre; lab. I-III MTWTh, 310MH) Glick, Cohen, Carr

## ELECTIVE COURSES

153. **Problems in Physiological Chemistry.** (See first term) Glick, Cohen
205. **Research in Physiological Chemistry.** (See first term) Glick, Cohen

## PHYSIOLOGY

*First Term*

## REQUIRED COURSES

Course 107, which is required work for freshman medical students, is continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools. Formerly part of 103-104.

4. **Human Physiology.** An elementary course consisting of lectures and demonstrations for students desiring an introduction to the subject. (4 cred.; all; prereq. high school or college biology and chemistry; lect. or dem. II-III TWThF; 214MH) King

## ELECTIVE COURSES

113. **Problems in Physiology.** Each student will be assigned a topic for special laboratory study. Conferences and reading. (Cred. and hrs. ar.) Ar.
114. **Seminar in Physiology.** Arranged with qualified students. (Cred. and hrs. ar.) Ar.
203. **Research in Physiology.** (Cred. and hrs. ar.) Visscher and others

*Second Term*

## REQUIRED COURSE

60. **Human Physiology.** An elementary course in human physiology. (6 cred.; primarily for med. tech. and 5-year nursing students; prereq. courses in physiological chemistry and human or mammalian anatomy; lect. VI MWF, VII TThF, VIII TTh, 111 Owre; conf. IV TTh, 111 Owre; lab. VII-IX MW) Ar.

## ELECTIVE COURSES

113. **Problems in Physiology.** (See first term)  
 203. **Research in Physiology.** (Cred. and hrs. ar.) Ar.

## PSYCHIATRY AND NEUROLOGY

*First Term*

## REQUIRED COURSES

The following courses, which are required work for freshman and junior medical students, are continued from the spring quarter through the first term of the Summer Session: 103 and 120. Not open to students from other medical schools.

*First Term and Second Term*

## ELECTIVE COURSES FOR MEDICAL STUDENTS

145. **Reading in Psychiatry.** Supervised reading. (Cred. and hrs. ar.) Staff  
 145x. **Reading in Neurology.** Supervised reading. (Cred and hrs. ar.) Staff  
 152. **Externship in Psychiatry.** (Limited to 10 students) This course offers the opportunity for medical students and physicians in practice to obtain clinical psychiatric training during the Summer Session. The training consists largely of work with patients under supervision and seminar type of discussion of cases. (6 cred.; hrs. ar.) Staff  
 153. **Externship in Neurology.** (Limited to 10 students) This course offers the opportunity for medical students and physicians in practice to obtain clinical neurological training during the Summer Session. The training consists largely of work with patients under supervision and seminar type of discussion of cases. (6 cred.; hrs. ar.) Staff

## COURSES FOR GRADUATE MEDICAL STUDENTS

208. **Clinical Neurology.** Supervised practice, in-patient and out-patient services. (Cred. and hrs. ar.) Baker and staff  
 208x. **Clinical Psychiatry.** Supervised practice, in-patient and out-patient services. (Cred. and hrs. ar.) Hastings and staff  
 208y. **Clinical Child Psychiatry.** Supervised practice, in-patient and out-patient services. (Cred. and hrs. ar.) Jensen and staff  
 209. **Research in Neurology.** (Cred. and hrs. ar.) Baker  
 212. **Survey of Neuropathology.** (Cred. ar.; prereq. 210; hrs. ar.) Baker  
 221. **Psychometric Clerkship.** (Cred. ar.; clinical psychology majors only; hrs. ar.) Hathaway, Schofield  
 226. **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.) Baker  
 228. **Research in Neuropathology.** (Cred. and hrs. ar.) Baker, Tichy  
 231. **Applied Electroencephalography and Myography.** (Cred. and hrs. ar.) Baker and staff  
 233. **Applied Neuropathology.** (Cred. and hrs. ar.) Baker, Tichy  
 244. **Seminar in Psychosomatics.** (1 cred.; hrs. ar.; consent of instructor) Aldrich  
 245. **Case Conference for Clinical Psychologists.** (Cred. and hrs. ar.; clinical psychology majors only) Staff

## RADIOLOGY

*First Term*

## REQUIRED COURSE

Course 121, which is required work for junior medical students, is continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

*Second Term*

## ELECTIVE COURSE

109. **Externship in Roentgen Diagnosis and Radiation Therapy.** Participation in the work of the X-Ray Department both in technic and in interpretation. The student will be given opportunity to observe and do some fluoroscopy, to assist in x-ray technic, and to observe x-ray interpretation. (Limited to 8 students. Permission required for registration) (4 cred.; senior medical students)

*First Term and Second Term*

## COURSES PRIMARILY FOR GRADUATE STUDENTS

- 111.\* **Medical Roentgenologic Conference.** Weekly meetings with the medical staff at which all the important medical cases which have had x-ray diagnostic procedures are reviewed from both the clinical and roentgenological points of view. (1 cred.; II M; Todd Amphitheater, University Hospitals) Rigler and staff
- 124.\* **Pediatric Roentgenologic Conference.** Weekly meetings with the pediatric staff at which all the important pediatric cases which have had x-ray diagnostic procedures are reviewed from both the clinical and roentgenological points of view. (1 cred.; II T; Eustis Amphitheater, University Hospitals) Rigler and staff
- 135c.\* **Surgical Roentgenologic Conference.** Weekly meetings with the surgical staff at which all the important surgical cases which have had x-ray diagnostic procedures are reviewed from both the clinical and roentgenological viewpoints. (1 cred.; II S; Todd Amphitheater, University Hospitals) Rigler and staff
- 163a.\* **Neurosurgical Roentgenologic Conference.** Weekly meetings with the neurosurgical staff at which all the important neurosurgical cases which have had x-ray diagnostic procedures are reviewed from both the clinical and roentgenological points of view. (1 cred.; VI F; Todd Amphitheater, University Hospitals) Peterson
200. **Research in Roentgenology.** Problems in roentgen diagnosis. (Cred. and hrs. ar.) Rigler and staff
204. **Research Related to Radiation Therapy.** (Cred. and hrs. ar.) Stenstrom and staff
206. **Roentgenoscopy.** The theory and practical application of roentgenoscopy, particularly to diseases of the gastrointestinal tract, lungs, and heart. (Cred. and hrs. ar.) Rigler and staff
207. **Roentgen and Radium Therapy.** Treatments of patients under supervision both with medium and high voltage machines and with radium. Problems in connection with these treatments will be thoroughly discussed. (Cred. and hrs. ar.) Stenstrom and staff
209. **Roentgen Diagnosis.** The theory and practical application of roentgen diagnostic methods to medical cases in general. (Cred. and hrs. ar.) Rigler and staff

210. **Roentgen Technic.** A consideration of the theory and practical application of the principles of roentgen technic including the study of x-ray machines and x-ray tubes, exposure, technic, and darkroom work. (Cred. and hrs. ar.) Rigler and staff
238. **Roentgen-Surgical Pathology Conference.** Weekly meetings with the surgical pathology staff at which surgical specimens and roentgenograms are reviewed from the pathologic and roentgenologic point of view. (1 cred.; 1 W; Todd Amphitheater, University Hospitals) Rigler, Hebbel
240. **Conference in Radiation Therapy.** Discussion of methods and dosage used for treatment of patients referred for x-ray and radium therapy and review of the results from previous treatments on patients with similar conditions. (Cred. and hrs. ar.) Stenstrom and staff

### MEDICAL TECHNOLOGY

Before registering, students should consult special advisers in the Medical Technology Office, W-225, University Hospitals, Minneapolis 14, Minnesota.

### OCCUPATIONAL THERAPY

Consult Occupational Therapy Office, 211TWH, University of Minnesota, Minneapolis 14, Minnesota.

### PHYSICAL THERAPY

Consult Physical Therapy Office, 204TWH, University Hospitals, Minneapolis 14, Minnesota.

### SURGERY

#### *First Term*

#### REQUIRED COURSES (UNDERGRADUATE STUDENTS)

Courses 121, 126, 127, 129, and 135, which are required work for sophomore or junior medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

139. **Operative Surgery.** The student is permitted to participate in surgical procedures on hospital patients in the operating room. (Cred. and hrs. ar.) Eder, Jones
152. **Problems in Clinical Investigations.** A study of special case records correlated with literature study. (Cred. and hrs. ar.) Creevy, Varco, Lewis, Lillehei, Smith, Rice
167. **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.) Creevy, Varco, Lewis, Lillehei, Smith, Rice

#### *Second Term*

- 135abcdek. **Junior Clinical Clerkship.** (Externs) Wangensteen, Varco, Leven, Rice, Bernstein, Lannin
139. **Operative Surgery.** (Externship) Wangensteen and staff
152. **Problems in Clinical Investigation.** (Externs) Wangensteen, Varco, Leven, Bernstein, Lannin, Rice
167. **Problems in Experimental Surgery.** (Externs) Wangensteen, Varco, Leven, Bernstein, Lannin, Rice

- 200. **Out-Patient Clinic in Surgery.** Wangensteen, Varco, Leven, Bernstein, Lannin
- 204. **Tumor Clinic.** (Externs) Hay, Hitchcock
- 214. **Surgical Ward Conference.** (Externs) Varco and staff
- 215. **Roentgenological Conference.** (Externs) Wangensteen, Varco, and staff
- 218. **Medical and Surgical Pathology Conference.** (Externs) Wangensteen, Varco, and staff

## **DIVISION OF GENERAL SURGERY**

### *First Term and Second Term*

#### REQUIRED COURSES FOR GRADUATE STUDENTS

- 200. **Out-Patient Clinic in Surgery.** The student is required to assist in the Out-Patient Surgical Clinic and to participate in diagnosis and treatment. University Hospitals surgical staff
- 202. **Applied Surgical Anatomy on the Cadaver.** Surgical fellows prepare dissections with staff supervision. Lewis, Lillehei, Rice
- 203. **Proctoscopy and Sigmoidoscopy.** The diagnosis and treatment of lesions of the lower bowel. University Hospitals surgical staff
- 204. **Tumor Clinic.** A combined clinical and pathological consideration of tumors as seen by the general surgeon. Staffs of Departments of Surgery and Biophysics. Stenstrom, Hay, Hitchcock
- 205. **Surgical Diagnosis.** The surgical fellow assists in the instruction of the clinical clerks and interns, and studies problems in diagnosis in the Out-Patient Department and in the University Hospitals. Wangensteen, Varco, Baronofsky, Lewis, Lillehei, Bernstein
- 208. **Surgical Service.** The surgical fellow acts as house surgeon at the University Hospitals. Wangensteen, Varco, Leven, Lewis, Lillehei
- 211. **Operative Surgery.** The surgical fellow acts as first assistant at operations in the University Hospitals, and later may be permitted to operate. Wangensteen, Varco, Leven, Baronofsky, Lewis, Lillehei, Bernstein
- 214. **Surgical Ward Conference.** Presentation of interesting cases by the students. University Hospitals surgical staff
- 215. **Roentgenological-Surgical Conference.** A weekly review of the films of all surgical patients. Staffs of the Departments of Radiology and Surgery
- 216. **Surgical Research.** Problems in experimental or clinical surgery. University Hospitals surgical staff
- 217. **Surgical Seminar.** Conferences for review of surgical literature, for presentation of cases, and as research. University Hospitals surgical staff
- 218. **Medical and Surgical Pathological Conference.** Review of interesting cases by the medical, surgical, and pathological staffs

## **DIVISION OF NEUROSURGERY**

### REQUIRED COURSES

- 305. **Neurosurgical Surgery.** The neurosurgical fellow assists in the instruction of the clinical clerks and interns, and studies problems in diagnosis in the Out-Patient Department and in the University Hospitals. Peyton, French
- 308. **Neurosurgical Service.** The neurosurgical fellow acts as house surgeon at the University Hospitals. Peyton, French
- 311. **Operative Neurosurgical Surgery.** The neurosurgical fellow acts as first assistant at operations in the University Hospitals, and later may be permitted to operate. Peyton, French
- 316. **Neurosurgical Research.** Problems in experimental or clinical surgery. University Hospitals surgical staff. Peyton, French

318. **Neurosurgical Conference.** A review of X-rays and case histories on Neurosurgical Service. Peyton

### **DIVISION OF UROLOGY**

#### **REQUIRED COURSES**

250. **Urological Surgery.** Creevy, Smith, Price  
 251. **Cystoscopy and Urological Diagnosis.** Creevy, Smith, Price  
 252. **Urological Conference.** Creevy, Smith, Price  
 253. **Research in Urology.** Creevy, Smith, Price

### **SCHOOL OF NURSING†**

#### **Courses and Fees**

The program of courses in the 1953 Summer Session has been planned primarily to meet the needs of graduate nurses. The student may complete courses totaling up to 9 credits or two 5-credit courses in each term. Students who have been admitted as candidates for the bachelor of science degree in nursing education register in the College of Education and pay Summer Session fees. (See pages 10-18.) Graduate nurses planning to register only for Summer Session courses register in the School of Nursing and pay Summer Session fees. (See pages 10-18.) §

#### **Curriculum for Graduate Nurses Leading to the Degree of Master of Education in Nursing Education**

Elective courses in this program are available during the Summer Session. Students registering for this program for the first time should complete their application prior to the beginning of the session. Qualified college graduates who have completed a basic professional program in nursing may begin this program in the Summer Session. Students planning to register for the academic year 1953-54 should consult the major adviser early, preferably during the first term. Students register in the College of Education and pay Summer Session fees. (See pages 10-18.)

#### **Curriculum for Graduate Nurses Leading to the Degree of Master of Nursing Administration**

The fourth quarter of the major sequence in this program is offered during the Summer Session. Elective courses in this program are available during the Summer Session. Students registering for this program for the first time should complete their application prior to the beginning of the session. Students planning to register for the academic year 1953-54 should consult the major adviser early, preferably during the first term. Students register in the School of Nursing and pay Summer Session fees. (See pages 10-18.)

#### **Curriculum for Graduate Nurses Leading to the Degree of Bachelor of Science**

Nursing education majors may register for courses during Summer Session. College graduates who have completed a basic professional program in nursing may begin the nursing education major in Summer Session.

Prerequisites to the minor in advanced clinical nursing—medical, obstetric, operating room, nursing of children, psychiatric, rural, surgical, tuberculosis—may be taken in the Summer Session.

Students register in the College of Education and pay Summer Session fees. (See pages 10-18.)

† For courses in Public Health Nursing, see pages 82-84.

§ The Summer Session may be used to supplement deficient basic nursing experience.

## Basic Curriculum in Professional Nursing Leading to a Degree of Bachelor of Science

High school graduates and transfer students from colleges or universities may register for prenursing courses§ in the Summer Session. Students register in the College of Science, Literature, and the Arts and pay Summer Session fees. (See pages 10-18.)

Students in the professional portion of the curriculum§ register in the School of Nursing and pay regular School of Nursing fees. Residents \$33, nonresidents \$50, plus \$21 incidental fee for the summer quarter.

## Curriculum in Practical Nursing Leading to a Certificate†¶

The fourth quarter of the four-quarter program leading to a certificate in practical nursing is offered during the Summer Session. Applicants are admitted at the beginning of the fall quarter only. Students register in the School of Nursing and pay regular practical nursing fees. Residents \$33, nonresidents \$50, plus \$21 incidental fee for the summer quarter.

## Human Relations in the Health Field

June 15 to June 26

A course given by Professor Leo W. Simmons. (See page 6 and Nurs. 180, below.)

## Psychiatric Nursing

A six-week program, July 20-August 28, designed to aid the graduate nurse in augmenting her clinical preparation will be offered in psychiatric nursing. The program will include both classes and experience and will be open for credit to graduate nurses who have not had psychiatric nursing in their basic professional curriculum. Other graduate nurses for whom this program would meet a special need may register for it with approval of the School of Nursing. Nursing Education majors register for this program in the College of Education and pay Summer Session fees. (See pages 10-18.) All other students register in the School of Nursing and pay Summer Session fees. (See pages 10-18.) Advance registration required.

## First Term

**Nurs.103. The Role of Nursing in Cancer Care and Control.** Consideration of nursing responsibilities in the prevention and early diagnosis of cancer, and in the treatment and rehabilitation of the cancer patient. Emphasis on the emotional, social, and economic problems of the patient with cancer, and the utilization of community resources in working toward a solution of these problems. (3 cred.; jr., sr., grad., grad. nurse; no prereq.; VII MTWThF; 207TSP) Hanson

**Nurs.180. Human Relations in the Health Field.** (June 15-26) A special course dealing with patterns and problems of relationships among personnel and between patients and personnel working in hospitals and related fields. (3 cred.; jr., sr., grad., grad. nurse; no prereq.; II-III MTWThF and ar.; 170ForH) Simmons

**Nurs.Ad.160. 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. (5 cred.; sr., grad. nurse; no prereq.; IV-V MTWThF; 113 Owre) Harris

† For additional information see *Bulletin of the School of Nursing*, 1951-53, pages 24 and 25.

§ *Bulletin of the School of Nursing*, 1951-53, pages 14-16.

¶ For program in Practical Nursing and Home Management see *School of Agriculture Bulletin*, 1952-54, pages 20-24.

**Nurs.Ad.170. § The Administrative Process in Nursing Service Administration.**

Study of selected principles of administration, and application of these principles to nursing; individual or group projects utilizing some administrative principles; overview of present-day concepts of nursing administration. (3 cred.; jr., sr., grad., grad. nurse; no prereq.; IV MTWThF; 111Owre) Florentine

**Nurs.Ad.193. Principles of Administration Applied to Nursing Service Administration.**

Budgeting; principles of budget making; formulation; execution; evaluation; appreciation of the meaning of fiscal terms; cost accounting; economy and efficiency in the utilization of manpower and materials; participation in community health program; legal problems in nursing. (3 cred.; open only to fourth quarter students in the Master of Nursing Administration Program; I MTWThF and ar.; 207TSP) Florentine

**Nurs.Ed.72. Application of Principles of Learning to Clinical Instruction.**

Study of learning situations in the basic professional program in nursing. Sources and selection of materials and organization of instruction. Evaluation of student learning in clinical situations. (3 cred.; soph., jr., grad. nurse; no prereq.; I MTWThF and ar.; 217TSP) Boyle, Norris

**Nurs.Ed.190. The Survey in Nursing Education.**

Introduction to the use of survey techniques in evaluating an educational situation, as a basis for improvement of an existing program, expansion of a program, establishment of a new program; as a basis for justification of proposed changes involving such areas as budget, facilities, organizational relationships, curriculum. (3 cred.; sr., grad., grad. nurse; prereq. consent of instructor; IV MTWThF and ar.; 130ForH) Harrington

**Note:** See also Ed.T. 51A, The Teaching of Nursing, College of Education, Methods and Student Teaching, page 99.

**Second Term**

**Nurs.68. Nursing Care of Psychiatric Patients.** A course providing for guided study, observation, and experience in the care of psychiatric patients, based upon an understanding of the dynamics of human behavior. Clinical nursing classes, demonstrations, field trips, individual patient studies, and conferences. (4 cred.; grad. nurse; no prereq.; ar.; ar.) Lediger and staff

**Nurs.Ad.193. Principles of Administration Applied to Nursing Service Administration.** (Continuation of Nurs.Ad. 193. See first term) (2 cred.; III-IV MW; 130ForH) Florentine

**Nurs.Ad.197. Problems in Nursing Service Administration.** (1 cred.; open only to fourth quarter students in the Master of Nursing Administration Program; III-IV F; 130ForH) Florentine

**Note:** See also Ed.T. 51A. The Teaching of Nursing, College of Education, Methods and Student Teaching, page 100.

**SCHOOL OF PUBLIC HEALTH†****First Term**

**50. ¶ Personal and Community Health.** Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings. (3 cred.; no prereq.; not open to students who have taken 3, 4, 51, 52, 100 or General College 10C; III MTWThF; 129MH) Bates

**60. 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 sanatorium

† Room schedule posted on bulletin board outside 121 Millard Hall.

§ Cannot be taken for credit by students in Master of Nursing Administration Program.

¶ No credit is granted for this course in the major sequence in public health nursing.

- toria patients; state program for the eradication of tuberculosis; legislation. (2 cred.; jr., sr.; prereq. 4 or 50 or 51 or 52 or 53, or 100 and 62; IV MTWF; 129MH) Myers
62. **Principles of Public Health Nursing I.** Trends, principles, and techniques in public health nursing service including family health guidance. (5 cred.; public health nurses; others admitted by permission; prereq. 100 or equiv. but may be taken concurrently; II-III MTWThF; 113 Owre) Sandve
65. § **Field Work in Public Health Nursing.** Practical experience under direction of staff of a public health agency. (15-16 cred.; prereq. 62 and 100 and C average in all courses) Sandve
100. **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. This course was formerly P.H. 53. (5 cred.; prereq. 3 or 50 or equiv. and a course in bacteriology; public health nurses and students in social work; lect. II MTWThF, 111 Owre; rec. I MTWF, 111 Owre) Thomson
125. **Community Health Education Programs.** Development of community-wide health education programs; group procedures; community organization; public relations; selection, development and use of media. (3 cred.; prereq. 100, 106; IV MTWThF; 104 IA) Ar.
145. **Workshop on Nursing in Health Programs for School-Age Children in School, Home, and Community.** For nurses (June 22-July 3). To give an opportunity to public health nurses to increase their understanding of the mental health needs of the school-age child and to provide opportunity for discussion of specific responsibilities and activities of the public health nurse in this area. (Limited to 25) (3 cred.; 107TSP) von Bergen, Cline, and others

### Second Term†

59. ¶ **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 General College 10C and 4, or General College 10C and 51, or 50, or 53 or 100, exemption from 3 on the basis of military service will not be accepted as substitute for suitable course in personal health; III MTWThF; 214MH) Ar.
63. **Principles of Public Health Nursing II.** Organization of public health nursing services; program planning; evaluation; professional problems in public health nursing. (5 cred.; public health nurses, others admitted by permission; prereq. 53 or 100 or equiv. but may be taken concurrently; II-III MTWThF; 111 Owre) Sandve
65. § **Field Work in Public Health Nursing.** Practical experience under direction of staff of a public health agency. (15-16 cred.; prereq. 62 and 100 and C average in all courses) Field
69. **Nursing in Health Programs for School-Age Children.** Health needs; organization and administration of school health programs; nursing functions. (3 cred.; prereq. 62, 63, 100 or concurrently with 63, or by permission; IV MTWThF; 214MH) Field
104. **Epidemiology.** Factors underlying spread of infectious diseases, with detailed discussion of selected diseases; simple statistical and epidemiologic methods. (3 cred.; jr., sr., grad.; prereq. 100; 140 or 110-111 must be taken concurrently or previously; II MTWThF; 129MH) Anderson

† Room schedule posted on bulletin board outside 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.

- 133. Mental Hygiene.** 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; VI MTWThF; 129MH) Cline
- 170. Supervision in Public Health Nursing.** Supervision as guidance; methods; administrative functions; preparation and selection of supervisors. (3 cred.; prereq. 100, 133 and experience in public health nursing, or by permission; I MTWThF; 129MH) Ar.
- 185. Workshop for Field Teachers.** (July 27-August 8) For public health nurses functioning as field teachers in public health agencies or as public health nursing coordinators in schools of nursing. The purpose of this course is to study and discuss problems of planning and giving well-rounded field experiences (observation and participation) and methods of evaluating work of students and the total field program. (Limited to 25) (3 cred.; 107TSP) Ar.

#### BIostatISTICS

- 110. 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. To be taken concurrently with 111. (3 cred.; prereq. 18 cred. in biological science or mathematics through analytical geometry; I MWF, 111 Owre, IV MWF, 111 Owre) Johnson
- 111. Biometry Laboratory.** Practical training in machine calculation and statistical techniques. To be taken concurrently with 110. (2 cred.; lab. 12 hrs. ar.; 118MH) Johnson, Elveback
- 140. Vital Statistics.** Study of official sources of vital statistics, including population changes, calculation of rates, and graphical exposition of trends. Differentiation and association; tests of significance. (3 cred.; to be taken in conjunction with 104, consent of instructor; VI-IX TTh; 12 Owre) Elveback

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## 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:

**First Term**—Listiak, Wittich, Hall, Clark, Speidel, Zander, Yock, Mitchell, Jensen, Holland, Tam, Serr, Zwisler, Schaffer

**Second Term**—Wittich, Hall, Clark, Speidel, Zander, Yock, Mitchell, Hillmann, Jensen, Holland, Tam, Serr, Zwisler, Schaffer

Dentistry fees during the summer quarter are: full-time tuition, resident \$90, nonresident \$145; half-time tuition, resident \$45, nonresident \$72.50. Credit hour fee: resident \$7, nonresident \$12.25. There will be an incidental fee of \$21.

## 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 the advisers in elementary and secondary education or the dean's office, College of Education, concerning a program for renewal of certificates.

Students should note that under the titles Curriculum and Instruction, Educational Administration, Educational Psychology, and Methods and Student 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 two-year curriculum of Minnesota state teachers colleges is accepted as equivalent. Students in the College of Education 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 *Bulletin of the College of Education*, 1952-54.

Summer Session students who are not candidates for a degree do not need to make application for admission nor present credentials (see page 3). Students expecting to become candidates for a Bachelor's degree, however, should apply for admission as regular students in the College of Education by filling out the application form in the Office of Admissions and Records and filing in that office any credentials on the basis of which they wish to request advanced standing. They should also seek as early as possible the advice of the major adviser in the department concerned in order to learn the requirements of the curriculum they will need to complete. Adult special students are not regular degree candidates.

### Counseling Services

The staff of the Student Personnel office of the college will be available during both terms for consultation concerning admission, requirements of the teaching profession, and for counseling. Appointments should be made in 206 Burton Hall.

### Committee on Student Scholastic Standing

Undergraduate students with questions concerning program adjustments and substitutions for required work should consult their advisers or the chairman of the Committee on Student Scholastic Standing. The office of the adviser for this committee will be 210A Burton Hall (Mr. Jarolimek) during both terms.

### 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.

**Workshops in home economics education**—Two workshops are planned for teachers of home economics during the first term. The first one, scheduled from June 15 to July 1, will be for experienced teachers who want help in the area of adult education (see H.E.Ed. 196E). The second workshop, on home experience and extended employment, will be scheduled from July 2 to 17 (see H.E.Ed. 196F). Application blanks for these workshops may be obtained by writing to the Director of the School of Home Economics, Institute of Agriculture, St. Paul 1.

**Workshops in higher education**—Two workshops in higher education will be jointly sponsored by the College of Education and the North Central Association of Colleges and Secondary Schools. In the first term, the workshop will be scheduled from June 15 to July 10 for the study of problems in the liberal arts related to teacher education. In the second term, the workshop, scheduled from July 27 to August 21, has been planned for teachers colleges staff members studying the problems of teacher education. Applicants for either workshop should write to the Dean, College of Education, University of Minnesota, Minneapolis 14. (See Ed.C.I. 228.)

### Marriage and Family Life Education

Several departments of the University, interested in education for marriage and family living, have cooperated in planning coordinated summer offerings for teachers and other professional workers concerned with this area. The basic course, open in the first term for thirty students, will be Materials and Procedures in Marriage and Family Life Education (see Ed.C.I. 112). Students in this course will plan a full program of 9 credits in the first term, after consultation with an adviser, adding to the basic course other offerings, selected in terms of the individual's background and interests, from the fields of sociology, child welfare, public health, counseling, psychology, education, home economics, and others. Students of senior or graduate standing with background in psychology and sociology may apply for registration in Ed.C.I. 112, securing application blanks from the Dean, College of Education, University of Minnesota, Minneapolis 14.

A special Family Life Workshop will be offered from July 6 to 24 for those now professionally engaged in family life education. The content of the Workshop will be organized around four study areas—teaching, marriage counseling, research and evaluation, and community education and planning. Outstanding national leaders in family life education will join the resident staff to provide unusually fine leadership in each of the study areas. Application must be made in advance, and further information may be secured from Mrs. Dorothy T. Dyer, Chairman, Family Life Program, 204 TNM, University of Minnesota, Minneapolis 14. (See Ed.C.I. 212.)

### Driver Education

A two-week course in Driver Education will be offered from June 22 to July 3. This course, scheduled for afternoons, will include materials and methods for teaching driver education and behind-the-wheel instruction. It will meet the requirements for approval by the State Department of Education for driver education in the schools. (See Ed.C.I. 101.)

### Summer Demonstration High School

The University High School will be in session in Peik Hall during the first term. Instruction will be offered in English, mathematics, general science, typing, art, physical education, German, and Spanish, and work in remedial reading will also be available. A summer theatre workshop will be included in the program. 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 University High School 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. For information regarding fees and registration procedure, address the Principal, University High School, Minneapolis 14.

Students registered in Ed.T. 52 will be assigned to observation and student 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 (I, II, III, IV MTWThF).

### Summer Demonstration Elementary School

An elementary school, grades one to six inclusive, will be in operation during the first term. 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 cooperative 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. 186.) (I, II, III, IV TWThF; Tuttle School, Talmadge Avenue and Eighteenth Avenue Southeast.)

### Psycho-Educational Clinic

The Psycho-Educational Clinic will be in operation during both terms for purposes of training, research, and service. Remedial reading classes will be operated for children whose difficulties have been previously diagnosed and for whom special remedial work has been recommended. These children will attend school two hours daily (9 to 11), Monday through Friday, and the full two-hour period will be used for individualized instruction. In addition, the Psycho-Educational Clinic will provide diagnosis and recommendation for school problem cases from the state on the same basis as during the school year. The services of the clinic, including the remedial reading classes, will provide demonstrations for various College of Education classes, as well as clinical practice opportunities for advanced students registered under Ed.Psy. 148, 150, and 151. Information may be obtained from the Director, Psycho-Educational Clinic, Pattee Hall, University of Minnesota, Minneapolis 14.

### Nursery School and Kindergarten

The Institute of Child Welfare maintains a nursery school and kindergarten in the first term which is open to children under the conditions described on page 111. These schools are also available for demonstration and observation. Courses offered by the institute and listed on page 111 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 \$22.50 per term plus incidental fee.

### Course Fees

Course fees are 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. (See Course Fees, pages 13-16.)

### Detailed Description of Courses

For detailed description of courses and curricula in education see the *Bulletin of the College of Education, 1952-54*.

### Notice Concerning Starred Courses

Graduate students who wish to work on individual problems to count toward the 9 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 20.)

## AGRICULTURAL EDUCATION

### First Term

82. **Methods in Teaching Agriculture.** Fundamentals of teaching methods as related to vocational agriculture at the secondary school level. Use of the Minnesota Vo-Ag Planning and Record Book. Determining needs and organizing learning experiences based on the FFA program of work. Problems of evaluation. Observation and participation in learning-teaching situations. (3 cred.; jr., sr.; prereq. 81; VI MTWThF; 302 Hr[StP]) Swanson
105. **FFA Program of Work.** Developing a program of instruction organized within the framework of the FFA program of work. Determining objectives, developing instructional guides, preparing units of instruction, and evaluating outcomes. (3 cred.; prereq. 81, 82; III-IV MTWThF first 3 weeks; ar. second 2 weeks; 301Hr[StP]) Swanson
137. **Adult Education in Agriculture.** The organization, objectives, and techniques for conducting programs for out-of-school farm youth and adult farm people. (3 cred.; III-IV MTWThF first 3 weeks; ar. second 2 weeks; 302Hr[StP]) Kitts
- 154.\* **Rural Education and Community Leadership.** An appraisal of community educational agencies; the process of and responsibilities for community leadership; the role of the school in the rural community; coordination of the school with nonschool educational agencies. (3 cred.; I-II MTWThF; 301Hr [StP]) Swanson
165. **Techniques of Instruction in Mechanized Farming.** A study of the problems and opportunities in teaching resulting from the mechanization and electrification of agriculture. Farm and home improvements, rural sanitation, farm power and machinery, electricity on the farm, soil and water management, and farm shop. Teaching aids and implications for programs of rural education. (3 cred.; prereq. consent of instructor; III-IV MTWThF for the first 3 weeks; ar. second 2 weeks; 302Hr[StP]) Kitts
168. **Techniques of Instruction in Soil and Water Management.** Developing a program of instruction in soil and water management. Teaching aids, development of units of instruction, job sheets and demonstrations, facilities and materials for instruction of adult, young farmer, and high school classes. (Limited to 30) (3 cred.; prereq. 165, grad. or consent of instructor; VI-IX MTWThF first 3 weeks; ar. second 2 weeks; 301Hr[StP]) Kitts
221. **Field Problems.** The development and study of special problems in the field of the individual student's choice. (3 cred.; grad.; ar.) Peterson, Kitts, Swanson
- 232.\* **Research in Agricultural Education.** (Designed especially for students meeting the Plan B requirement) Investigation in problems of education for farm people. Selecting research problems, preparing bibliographies, analyzing and interpreting data, and preparing manuscripts. (3 to 9 cred.; grad.; ar.) Peterson, Kitts, Swanson

### Second Term

91. **Supervised Student Teaching.** Observation and participation in the learning-teaching process. Teaching experience and program analysis under supervision of selected teachers. Organization and execution of activities necessary to successful teaching of agriculture in Minnesota high schools. (6 cred.; jr.; ar.) Kitts, Swanson
221. **Field Problems.** (See first term) Peterson, Kitts, Swanson
- 232.\* **Research in Agricultural Education.** (See first term) Peterson, Kitts, Swanson

## ART EDUCATION

The Department of Art Education offers professional training and guidance for teaching and supervisory positions in the field of art. The art education curriculum provides opportunities to combine a creative art career with a teaching position, a combination popular with many outstanding contemporary artists. The department also provides courses for general teachers who will integrate art with other educational experience.

### First Term

18. **Design Activities for Elementary Education.** Provides a background survey of art in life and education. Relationships between art and nature. Problems in invention, arrangement and decoration, color, lettering, posters, bulletin board displays, etc. (3 cred.; I-II MTWThF; 109J) Hastie
184. **Advanced Course in the Teaching and Supervision of Art in the Elementary School.** Improving current practices through critical evaluation and utilization of research findings and introduction of new materials. Development of closer cooperation between classroom teachers and art education specialists. (3 cred.; sr., grad.; IV MTWThF; 109J; and observation in Tuttle Demonstration School) Gayne
189. **Application of Esthetic Theory in Education.** Contemporary theories of art, their psychological and philosophical foundations with experimental evidence. Open to teachers, supervisors, and administrators concerned with making art function in general education at all levels. (3 cred.; VI MTWThF; 109J) Hastie
284. **Research in Art Education.** Application of research techniques to the field of art education, with experience in locating, defining, and studying basic problems through the use of objective tools of research. (3 cred.; III MTWThF; 109J) Gayne
295. **Problems in Art Education.** Individual specialization and creative projects selected. Projects may include advanced laboratory practice or technical solution of problems involving research or reading in a chosen field. Registration by special permission of major adviser. (Cred. ar.; ar.) Gayne, Hastie
296. **Seminar in Art Education.** Reports, evaluation of problems, recent literature. Participation by art education staff and guest specialists from related departments and from off campus. Open to advanced students in education. (No cred.; VII T; 105J) Gayne, Hastie

### Second Term

84. **Teaching Art in the Elementary School.** Place and content of art in elementary school curriculum. Methods for securing optimum educational outcomes from art activities. (3 cred.; prereq. 17, 18; II MTWThF; 109J) Gayne
295. **Problems in Art Education.** (See first term) Gayne

## EDUCATIONAL ADMINISTRATION

## First Term

## GENERAL COURSES

- Ed.Ad.124. Public School Administration.** The organization, administration, and general support of public schools in state and local school districts. (3 cred.; sr.; prereq. 9 cred. in education; I MTWThF; 211NH) Davidson
- Ed.Ad.210.\* Financial Aspects of Public School Business Administration.** Financial program planning, budgeting, accounting, cost finding, income and expenditure control; and the preparation and analysis of financial reports. (3 cred.; prereq. 227; II MTWThF; 3F) Swenson
- Ed.Ad.225.\* 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.; prereq. 124; III MTWThF; 110P) Cramer
- Ed.Ad.226.\* School Plant Planning and Management.** Plant program planning and financing, including operation and maintenance of public school buildings. (3 cred.; prereq. 227; III MTWThF; 313JohH) Friswold
- Ed.Ad.227.\* Teacher and Employee Administration.** Selection and placement of school employees, salary schedules, conditions of service, records and reports, and legal aspects of teacher and employee personnel administration. (3 cred.; prereq. 225; IV MTWThF; 5F) Swenson
- Ed.Ad.228.\* Special Problems in Educational Administration.** Designed primarily for superintendents and principals qualified to make intensive studies of specific problems related to the administration of a school system. (1-3 cred.; prereq. 225; II TTh; 105JohH) Neale
- Ed.Ad.229. Problems in Planning School Buildings.** Superintendents may work in this course on specific plans for buildings in their own districts. Standards and space facilities for elementary, junior high, and senior high school buildings with respect to classrooms, laboratories, physical and health education, industrial education shops, music, home economics. (Limited to 35) (4 cred.; grad.; June 15 to July 1; prereq. 226 or equiv.; I-IV MTWThF; 309, 306JohH) Friswold, Hammel
- Ed.Ad.230.\* Public Relations for Schools.** Theory and practice of educational interpretation. Principles involved; machinery and personnel; techniques of working with groups; the teacher's contacts with the community; the role of the pupil; professional and lay organization. (3 cred.; prereq. 225; III MTWThF; 9F) Davidson
- Ed.Ad.234. Problems in State School Administration.** State legislative program; state aid; district reorganization; transportation; area vocational schools; and other problems of state school administration. A practicum intended primarily for school superintendents who have completed the work for a Master's degree with a major in school administration. (Limited to 35) (4 cred.; grad.; July 2 to 17; I-IV MTWThF; 307, 309JohH) Berning and consultants
- Ed.Ad.235. Seminar in Educational Administration.** Enrolment limited to candidates for Master's degrees under Plan A and candidates for Ph.D. degrees in educational administration. (No cred.; II W; 105JohH) Neale

## ELEMENTARY EDUCATION

- Ed.Ad.115. 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.; prereq. 9 cred. in education; I MTWThF; NHAud) Cramer

## SECONDARY EDUCATION

- Ed.Ad.133. Basic Procedures in Student Personnel Work.** (Also listed as Ed.Psy. 133) (3 cred.; prereq. 9 cred. in education; III MTWThF)  
 Sec. 1 (for administrators), 207NH, Estenson      Sec. 2 (for counselors-teachers), 209NH, Borow
- Ed.Ad.218. Recent Literature in Secondary Education.** (Cred. ar.; VI-VII W; 202TNUH) Boardman, R. Keller
- Ed.Ad.263. Organization of the Secondary School.** (3 cred.; IV MTWThF; 111Bu) Fisher
- Ed.Ad.264. Administration of Instructional Activities in the Secondary School.** (3 cred.; II MTWThF; 112Bu) Fisher
- Ed.Ad.270.\* Special Problems in Secondary Education.** (Cred. ar.; prereq. consent of instructor; VI-VII W; 202TNUH) Boardman, R. Keller

## HIGHER EDUCATION

- Ed.Ad.274. The Junior College.** (3 cred.; III MTWThF; 3F) R. Keller

## Second Term

## GENERAL COURSES

- Ed.Ad.124. Public School Administration.** (See first term) (I MTWThF; 80ForH) Davidson
- Ed.Ad.210.\* Financial Aspects of Public School Business Administration.** (See first term) (I MTWThF; 307F) Kearney
- Ed.Ad.225.\* Pupil Personnel Administration.** (See first term) (III MTWThF; 115JohH) Cramer
- Ed.Ad.226.\* School Plant Planning and Management.** (See first term) (III MTWThF; 307F) Williams
- Ed.Ad.227.\* Teacher and Employee Administration.** (See first term) (III MTWThF; 2F) Kearney
- Ed.Ad.228.\* Special Problems in Educational Administration.** (See first term) (II Th; 6F) Neale
- Ed.Ad.230.\* Public Relations for Schools.** (See first term) (IV MTWThF; 9F) Davidson
- Ed.Ad.234. Problems in State School Administration.** This course is for staff members of state departments of education and graduate students in school administration interested in state department offices. State legislative program; state aid; district reorganization; transportation; area vocational schools; and other problems of state school administration. (4 cred.; grad.; prereq. admission by advance application to dean's office, College of Education; July 20 to August 6; I-IV MTWThF; 310, 309JohH) Berning and consultants
- Ed.Ad.235. Seminar in Educational Administration.** (See first term) (II T; 208F) Neale

## ELEMENTARY EDUCATION

- Ed.Ad.115. Organization of the Elementary School.** (See first term) (I MTWThF; 113JohH) Cramer

## SECONDARY EDUCATION

- Ed.Ad.133. Basic Procedures in Student Personnel Work.** (See first term) (I MTWThF; 209NH) Borow
- Ed.Ad.218. Recent Literature in Secondary Education.** (See first term) (Time and place ar.) Boardman
- Ed.Ad.264. Administration of Instructional Activities in the Secondary School.** (See first term) (II MTWThF; 175PeikH) Mitchell
- Ed.Ad.265. Administration of the Noninstructional Activities in the Secondary School.** (3 cred.; IV MTWThF; 111Bu) R. Keller
- Ed.Ad.270.\* Special Problems in Secondary Education.** (See first term) (Time and place ar.) Boardman, R. Keller

## CURRICULUM AND INSTRUCTION

## First Term

## GENERAL COURSES

- Ed.C.I.101. Driver Education.** Materials and methods for driver education; building a plan for driver education for a specific school; behind-the-wheel training. Valid Minnesota driver's license required. Content planned to meet requirements of State Department of Education for driver education in the schools. (Limited to 32) (2 cred.; no prereq.; 1:00 to 5:00 p.m. June 22 to July 3; 20, 30ForH) Neal, Shields
- Ed.C.I.105. Audio-Visual Materials in Education.** (3 cred.; sr., grad.; II MTWTh and 1 hr. ar.; BuAud) Pearson
- Ed.C.I.109. Audio-Visual Materials and Equipment Laboratory.** (Limited to 30) (3 cred.; prereq. 105 or concurrent registration or consent of instructor; III MTWThF; 206WeH) Pearson
- Ed.C.I.112. Materials and Procedures in Marriage and Family Life Education.** (See page 86) (Limited to 30) (3 cred.; sr., grad.; admission by advance application to dean's office, College of Education, and consent of instructor; VI MTWThF; 107TNM) Dyer
- Ed.C.I.129. Principles and Problems of Teaching Social Hygiene.** Social hygiene or sex education in its broadest aspects; physical, sociological, and psychological. Methods of social hygiene education and integration of material with total health curriculum. Primarily for teachers. (3 cred.; prereq. 9 cred. in education; III MTWThF; 360SBH) Ferguson
- Ed.C.I.133. Consumer Education in the Schools.** (3 cred.; I MTWThF; 5F) Price
- Ed.C.I.145. Reading Difficulties.** (3 cred.; prereq. course in reading or basic training in counseling or school psychological work; IV MTWThF; 110P) Reynolds, Carlson
- Ed.C.I.174-175-176. Clinical Methods and Practice in Speech Pathology.** (3 cred. each; prereq. Speech 61, 67, 119, 162, and 163 or concurrent registration; ar.) Bryngelson
- Ed.C.I.205.\* Problems in Audio-Visual Education.** (Cred. ar.; prereq. consent of instructor; ar.) Pearson
- Ed.C.I.212.§ Family Life Workshop.** A workshop for persons now professionally engaged in family life education; content organized under four study areas: teaching, marriage counseling, research and evaluation, and community education and planning. (Limited to 50) (4 cred.; admission by advance application to dean's office, College of Education, and consent of director [see page 86]; July 6 to 24; ar. MTWThF; Pioneer Hall) Dyer (director), Bowman, Bridgman, Hill, and Kirkendall
- Ed.C.I.271.\* Problems in Curriculum Construction.** (Cred. ar.; prereq. consent of instructor; ar.) Goossen, Boeck, Burton
- Ed.C.I.273.\* Problems in Reading.** (Cred. ar.; prereq. 143 or 144 or consent of instructor; ar.) Bond

## ELEMENTARY EDUCATION

- Ed.C.I.102. Teaching the Social Studies in the Elementary School.** (3 cred.; prereq. Ed. 71C or equiv.; II MTWThF; 2P) Chase
- Ed.C.I.103. Teaching of Science in the Elementary School.** Emphasis on resources and materials, and their application to the elementary grades. (3 cred.; sr., grad.; prereq. Ed. 71A-B or teaching experience; II MTWThF; 115JohH) Boeck
- Ed.C.I.119. Elementary School Curriculum.** (3 cred.; prereq. Ed. 71C or equiv.)

Sec. 1, I MTWThF, 111Bu, Jarolimek

Sec. 2, II MTWThF, 110P, Goossen

§ 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.123. Speech in the Elementary School.** Lectures; discussion; individual projects. The role of the elementary teacher in the promotion of good speech, the prevention of speech problems, and the handling of speech defects. Projects related to the teacher's own teaching situation. (3 cred.; sr.; no prereq.; I MTWThF; 2F) Henrikson
- Ed.C.I.143. Teaching and Supervision of Reading in the Elementary School.** (3 cred.; prereq. 9 cred. in education; II MTWThF; 211NH) Bond
- Ed.C.I.149. Teaching and Supervision of Arithmetic in the Elementary School.** (3 cred.; prereq. Ed. 71C or equiv.; not open to those with credit in 62A or B; II MTWThF; 101FraH) Curtis
- Ed.C.I.150. Supervision and Improvement of Instruction.** (3 cred.; prereq. Ed. 71C or equiv.; IV MTWThF; 211NH) Goossen
- Ed.C.I.153. Supervision and Teaching of English in the Elementary Schools.** (3 cred.; prereq. Ed. 71C or equiv.; IV MTWThF; 114JohH) Chase
- Ed.C.I.162. Laboratory in Nursery School and Kindergarten Instructional Practices.** Open to experienced teachers; other professional workers admitted by special permission. (3 cred.; IV MWF and hrs. ar.; 6F) Fuller
- Ed.C.I.163. Plastic Materials, Story Telling, and Social Studies for Young Children.** Open to experienced teachers, other professional workers admitted by special permission. (3 cred.; VI MTWThF and observation hrs. ar.; 202Pt) Headley
- Ed.C.I.186. 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 ar. MTWThF, Tuttle School; lect. VI WTh, 216NH) Staudenmaier
- Ed.C.I.261.\* Special Problems in the Improvement of Instruction.** (Cred. ar.; prereq. consent of instructor; ar.) Goossen

## SECONDARY EDUCATION

- Ed.C.I.113. High School Curriculum.** (3 cred.; prereq. Ed. 55A-B or equiv.; VII MTWThF; 213NH) Gwynn
- Ed.C.I.122. Literature for Adolescents.** (3 cred.; prereq. Ed. 55B or junior-senior high school teaching experience; I MTWThF; 216NH) D. V. Smith
- Ed.C.I.125. Occupational Information Laboratory.** (Limited to 25) (3 cred.; prereq. consent of instructor; I MTWThF; 107NH) Borow
- Ed.C.I.135. Group Procedures in Guidance.** (Limited to 35) (3 cred.; prereq. 9 cred. in education, Ed.Psy. 133 or consent of instructor; IV MTWThF; 3F) K. Hoyt
- Ed.C.I.136. Business and Distributive Education Under the Vocational Acts.** (3 cred.; III MTWThF; 5ShH) Hager
- Ed.C.I.137B. Advanced Materials and Methods in Cooperative Part-Time Classes.** (3 cred.; prereq. consent of instructor; I MTWThF; 5ShH) Meyer
- Ed.C.I.140. Teaching of Speech.** (3 cred.; jr., sr., grad.; prereq. Speech 1-2-3 or Speech 5-6 or equiv. or consent of instructor; II MTWThF; 304F) D. K. Smith
- Ed.C.I.141. Cooperative Part-Time Work Experience Programs.** (3 cred.; IV MTWThF; 5ShH) Meyer
- Ed.C.I.144. Teaching of Reading in Secondary Schools.** (3 cred.; prereq. 9 cred. in education; II MTWThF; 5F) Kessler
- Ed.C.I.158. Materials and Methods in Office and Clerical Practice.** (3 cred.; II MTWThF; 5ShH) Archer
- Ed.C.I.161. Curriculum Construction in Business Education.** (3 cred.; prereq. 113; III MTWThF; 5F) Price

- Ed.C.I.168. **Current Developments in the Social Studies.** (3 cred.; grad.; III MTWThF; 303JohH) McCune
- Ed.C.I.171. **Curriculum Laboratory Practice.** Open to Minneapolis teachers working on the secondary school project in communication. Group and individual projects. (6 cred.; prereq. consent of instructor; VI-VII MTWThF and conference hrs. ar.; PeikH) Bond, Burton, L. Cook, and consultants
- Ed.C.I.173B. **Organizing Units of Instruction in the Secondary School.** (3 cred.; prereq. 113 or consent of instructor; IV MTWThF; 107NH) Gwynn
- Ed.C.I.199E. **Internship.** (Cred. ar.; available for M.Ed. students in recreation; ar.) Fitzgerald
- Ed.C.I.201.\* **Problems in Teaching the Social Studies.** (Cred. ar.; prereq. 168, 204 or consent of instructor; ar.) McCune
- Ed.C.I.225.\* **Special Problems in Supervision of Instruction in Secondary Schools.** (Cred. ar.; prereq. consent of instructor; VI-VII W; 202TNUH) Boardman
- Ed.C.I.238.\* **Problems in Distributive Education.** (Cred. ar.; prereq. consent of instructor; ar.) Meyer
- Ed.C.I.239.\* **Problems in Business Education.** (Cred. ar.; prereq. consent of instructor; ar.) Price
- Ed.C.I.266. **Supervision of High School Instruction.** (3 cred.; prereq. Ed.Psy. 293 or consent of instructor; III MTWThF; 111Bu) Boardman
- Ed.C.I.270. **Improvement of Instruction in the Secondary School.** A graduate practicum intended for those who have a Master's degree in School Administration. Study of current programs for the improvement of instruction in secondary schools; examination of current research on instructional methods in the major instructional fields of the secondary school; planning programs for the improvement of instruction; instructional materials. (Limited to 35) (4 cred.; grad.; June 15 to July 1; I-IV MTWThF; 307, 309JohH) Edmonson, Vredevoe
- Ed.C.I.287.\* **Advanced Course in the Teaching of Science.** (3 cred.; grad.; IV MTWThF; 375PeikH) Boeck
- Ed.C.I.294.\* **Advanced Course in Curriculum and Methods in Secondary School English.** (3 cred.; prereq. Ed.T. 75A-B-C or equiv.; II MTWThF; 216NH) D. V. Smith
- Ed.C.I.296.\* **Special Problems in Teaching English.** (Cred. ar.; ar.) D. V. Smith

#### HIGHER EDUCATION

- Ed.C.I.228.\*§ **Workshop: Problems of Higher Education and Teacher Education.** (6 cred.; grad.; June 15 to July 10; ar. MTWThF; CCS) Cooper, Eckert, Stevens, Furrow, Mork, Stecklein, and consultants
- Ed.C.I.250. **Higher Education in the United States.** (3 cred.; prereq. a year of graduate study in any field or 18 cred. in education; IV MTWThF; 105JohH) Eckert
- Ed.C.I.252. **Effective College Teaching.** (3 cred.; prereq. a year of graduate study in any field or 18 cred. in education; I MTWThF; 303JohH) McCune

#### Second Term

##### GENERAL COURSES

- Ed.C.I.105. **Audio-Visual Materials in Education.** (See first term) (II MTWTh and 1 hr. ar.; BuAud) Pearson
- Ed.C.I.106. **Coordinating an Audio-Visual Education Program.** (3 cred.; prereq. 105 or consent of instructor; I MTWThF; 206WeH) Pearson
- Ed.C.I.107. **Radio in Education.** (3 cred.; prereq. 9 cred. in education; III MTWThF; 302MurH) Tyler

§ 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.133. **Consumer Education in the Schools.** (See first term) (II MTWThF; 110F) Price  
 Ed.C.I.145. **Reading Difficulties.** (See first term) (IV MTWThF; 207NH) Reynolds  
 Ed.C.I.205.\* **Problems in Audio-Visual Education.** (See first term) Pearson  
 Ed.C.I.207.\* **Problems in Radio Education.** (1-3 cred.; prereq. 107; ar.) Tyler  
 Ed.C.I.271.\* **Problems in Curriculum Construction.** (See first term) Goossen  
 Ed.C.I.273.\* **Problems in Reading.** (See first term) Tinker, Reynolds

## ELEMENTARY EDUCATION

- Ed.C.I.102. **Teaching the Social Studies in the Elementary School.** (See first term) (I MTWThF; 110P) Jarolimek  
 Ed.C.I.103. **Teaching of Science in the Elementary School.** (See first term) (IV MTWThF; 6FraH) Boeck  
 Ed.C.I.119. **Elementary School Curriculum.** (See first term) (II MTWThF; 3F) Goossen  
 Ed.C.I.143. **Teaching and Supervision of Reading in the Elementary School.** (See first term) (III MTWThF; 109Psy) Tinker  
 Ed.C.I.149. **Teaching and Supervision of Arithmetic in the Elementary School.** (See first term) (II MTWThF; 112Bu) Brueckner  
 Ed.C.I.150. **Supervision and Improvement of Instruction.** (See first term) (IV MTWThF; 308F) Brueckner  
 Ed.C.I.261.\* **Special Problems in the Improvement of Instruction.** (See first term) Brueckner, Goossen

## SECONDARY EDUCATION

- Ed.C.I.113. **High School Curriculum.** (See first term) (II MTWThF; 102FraH) Gwynn  
 Ed.C.I.134. **Materials and Methods in Consumer Education.** (3 cred.; prereq. consent of instructor; IV MTWThF; 103F) Price  
 Ed.C.I.135. **Group Procedures in Guidance.** (See first term) (III MTWThF; 109F) K. Hoyt  
 Ed.C.I.138. **Training Store and Office Supervisors.** (3 cred.; prereq. consent of instructor; I MTWThF; 5ShH) Meyer  
 Ed.C.I.139. **Coordination Techniques.** (3 cred.; III MTWThF; 5ShH) Meyer  
 Ed.C.I.144. **Teaching of Reading in Secondary Schools.** (See first term) (II MTWThF; 207NH) Tinker  
 Ed.C.I.155. **Materials Laboratory for Social Studies Teachers.** (3 cred.; prereq. consent of instructor; I MTWThF; 314JohH) McCune  
 Ed.C.I.170B. **Curriculum and Course of Study Construction.** (3 cred.; prereq. 113 or 119 or consent of instructor; I MTWThF; 101FraH) Gwynn  
 Ed.C.I.201.\* **Problems in Teaching the Social Studies.** (See first term) McCune  
 Ed.C.I.204. **Social Studies Curriculum.** (3 cred.; III MTWThF; 303JohH) McCune  
 Ed.C.I.225.\* **Special Problems in Supervision of Instruction in Secondary Schools.** (See first term) (Time and place ar.) Boardman  
 Ed.C.I.238.\* **Problems in Distributive Education.** (See first term) Meyer  
 Ed.C.I.239.\* **Problems in Business Education.** (See first term) Price  
 Ed.C.I.266. **Supervision of High School Instruction.** (See first term) (III MTWThF; 107NH) Boardman

## HIGHER EDUCATION

- Ed.C.I.228.\*§ **Workshop: Problems of Higher Education and Teacher Education.** (See first term) (July 27 to August 21; ar. MTWThF; CCS) Grim, Jacobs, Mork, Potthoff, and consultants

§ 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.

## EDUCATIONAL PSYCHOLOGY

## First Term

## GENERAL COURSES

- Ed.Psy.60. Introduction to Measurement and Statistics.** (3 cred.; prereq. 6 cred. in psychology; VI MTWThF; 209NH) C. Hoyt
- Ed.Psy.120. Basic Principles of Measurement.** (3 cred.; prereq. 60 or equiv.; VII MTWThF; NHAud) C. Hoyt
- Ed.Psy.140. Instruments and Techniques of Measurement.** (3 cred.; sr., grad.; prereq. 120 or equiv.; III MTW and III-IV ThF; 112Bu) Edson
- Ed.Psy.148. Clinical Diagnosis of Reading Difficulties.** (3 cred.; prereq. Ed.C.I. 145 and 9 hours of psychology or educational psychology; VII MTWThF; 202Pt) Carlson
- Ed.Psy.150. Clinical Practice in Remedial Teaching.** Practice in remedial tutoring of individual children who have experienced difficulty in school learning. (3 cred.; prereq. Ed.C.I. 145 or 151 and consent of instructor; V T and hrs. ar.; 202TNUH) Reynolds, Carlson
- Ed.Psy.151. Clinical Practice in Educational Diagnosis.** Practice in diagnosis of school learning problems. Includes measurement, interview technique, preparation of case reports, etc. Work with children referred to the Psycho-Educational Clinic. (3 cred.; prereq. 142 or Ed.C.I. 145 and consent of instructor; ar.) Reynolds
- Ed.Psy.159. Personality Development and Mental Hygiene.** (3 cred.; I MTWThF; 110P) Estenson
- Ed.Psy.182. Education of Exceptional Children.** Overview of the field of special education. Especially for classroom teachers, counselors, supervisors, and administrators; also the initial course for students working for special class certificates. Reports on individual work equivalent to one credit. (3 cred.; prereq. Ed. 55B or 71C or equiv.; VI TWTh and hrs. ar.; 5ShH) Reynolds, Schoenbohm
- Ed.Psy.208.\* Methods in Educational Research.** A study of the methods and techniques employed in the investigation and report of educational problems. Suggested for all candidates for graduate degrees. (3 cred.; grad.; II MTWThF; 111Bu) P. O. Johnson
- Ed.Psy.211. Statistical Methods for School Administrators.** A first course in statistics with emphasis on applications to the production and interpretation of research in school administration and supervision. (Limited to 35) (4 cred.; prereq. Master's degree in School Administration with Ed.Psy. 120 or equiv.; July 2-17; I-IV MTWThF; 111AH) Moonan
- Ed.Psy.216. Statistical Methods in Education.** (3 cred.; grad.; I MTWThF; 112Bu) P. O. Johnson
- Ed.Psy.216a. Statistical Methods in Education—Laboratory.** (Limited to 15) (2 cred.; VII-VIII MWF; 221Bu) Moonan
- Ed.Psy.225.\* Diagnosis as a Phase of Counseling.** (3 cred.; prereq. 140 or concurrent registration and 133 or 250 or Psychology 130; IV MTWThF; 207NH) Wrenn
- Ed.Psy.233.\* Problems in Guidance and Personnel Work.** (Cred. ar.; ar.) Wrenn, Borow, Estenson
- Ed.Psy.253.\* Research Problems.** (Cred. ar.; prereq. consent of instructor; ar.) P. O. Johnson, Wrenn, Hoyt, Reynolds, Mork
- Ed.Psy.293.\* Psychology of Learning.** (3 cred.; prereq. 12 cred. in psychology and educational psychology; VI MTWThF; 211NH) Mork

## SECONDARY EDUCATION

**Ed.Psy.133. Basic Procedures in Student Personnel Work.** (Also listed as Ed.Ad. 133) (3 cred.; prereq. 9 cred. in education; III MTWThF)

Sec. 1 (for administrators), 207NH,  
Estenson

Sec. 2 (for counselors-teachers), 209NH,  
Borow

**Ed.Psy.134. School Counseling Procedures.** (Limited to 30) (3 cred.; prereq. 120, 133 and consent of instructor; II MTWThF; 2F) K. Hoyt

*Second Term*

## GENERAL COURSES

**Ed.Psy.120. Basic Principles of Measurement.** (See first term) (IV MTWThF; 211NH) Goossen

**Ed.Psy.150. Clinical Practice in Remedial Teaching.** (See first term) (V T and hrs. ar.; 101Pt) Reynolds

**Ed.Psy.151. Clinical Practice in Educational Diagnosis.** (See first term) Reynolds

**Ed.Psy.159. Personality Development and Mental Hygiene.** (See first term) (II MTWThF; 206WeH) Wrenn

**Ed.Psy.217. Statistical Methods in Education.** (3 cred.; grad.; I MTWThF; 112Bu) Moonan

**Ed.Psy.217a. Statistical Methods in Education—Laboratory.** (Limited to 15) (2 cred.; VII-VIII MWF; 221Bu) Moonan

**Ed.Psy.226.\* Interviewing Procedures in Counseling.** (3 cred.; prereq. 140, 133 or 250, or Psychology 130 and 225 or equiv.; II MTWThF; 5ShH) Borow

**Ed.Psy.233.\* Problems in Guidance and Personnel Work.** (See first term) Wrenn, Borow

**Ed.Psy.253.\* Research Problems.** (See first term) Wrenn, Reynolds, Mork

**Ed.Psy.293.\* Psychology of Learning.** (See first term) (VI MTWThF; 211NH) Mork

## SECONDARY EDUCATION

**Ed.Psy.133. Basic Procedures in Student Personnel Work.** (See first term) (I MTWThF; 209NH) Borow

## GENERAL EDUCATION

*First Term*

**Ed.81. Introduction to Education for Public Health Nurses.** Not open to candidates for a degree in the College of Education. (3 cred.; VI MTWThF; 113Owre) Ar.

## HISTORY AND PHILOSOPHY OF EDUCATION

*First Term*

**131. Comparative Education.** (3 cred.; II MTWThF; 209NH) Beck

**156. History of Ideas in American Education.** The study of selected readings in American political, economic, and social development with special reference to an emerging system of public education. (3 cred.; IV MTWThF; 2F) Ellis

**180. The School and Society.** (Limited to 80 in each section) (3 cred.; sr.; prereq. Ed. 55A-B or 71A-B-C)

Sec. 1, III MTWThF, 2P, Beck

Sec. 2, VI MTWThF, 115JohH, Ellis

**241.\* Problems in the History and Philosophy of Education.** (Cred. ar.; pre-req. consent of instructor; ar.) Beck, Ellis

**Second Term**

141. **Critical Issues in Contemporary Education.** (3 cred.; II MTWThF; 209NH) Beck  
 180. **The School and Society.** (See first term) (III MTWThF; 55ForH) Beck  
 241.\* **Problems in the History and Philosophy of Education.** (See first term) Beck

**HOME ECONOMICS EDUCATION****First Term**

- 196E. **Workshop: Adult Education.** Study of procedures in teaching adults; planning the program; use of newer materials and techniques; group and individual problems to meet the needs of experienced teachers. (Limited to 25) (4 cred.; grad.; hrs. ar.; 114HE[StP]) Ford, Keller  
 196F. **Workshop: Home Experience and Extended Employment.** Methods of using the extended period of employment effectively; techniques for the selection, execution, and evaluation of home experiences; group or individual problems to meet special interests and needs of experienced teachers. (Limited to 25) (4 cred.; grad.; hrs. ar.; 114HE[StP]) Ford, Christian (consultant)  
 293.\* **Problems in Home Economics Education.** Designed to meet the needs of advanced students for independent study of current educational problems. (Cred. ar.; grad.; prereq. consent of instructor; hrs. ar.; 114HE[StP]) Rose  
 295.\* **Seminar in Home Economics Education.** Discussion and reports on current problems in home economics education. Special emphasis on the philosophy, principles, and procedures in supervision of student teachers and teachers in service. (3 cred.; grad.; prereq. consent of instructor; II MTWThF; 114HE [StP]) Rose

**INDUSTRIAL EDUCATION**

(See course descriptions, *College of Education Bulletin*, 1952-54, pages 80-81.)

**First Term**

100. **Industrial Instruction.** (3 cred.; prereq. 42, Ed. 55B or equiv.; not open to those with credit in 70; IV MTWThF; 202TNUH) Quick  
 105. **Administration of Industrial Education.** (3 cred.; prereq. 61, 80, or equiv.; II MTWThF; 202TNUH) Smith  
 106. **Industrial Education Workshop.** Work will be done in the newer subjects or areas on curriculum problems, course outlines, teaching guides, instructional aids, and evaluation. Necessary manipulative work will occur but the usual type of shop course is not envisioned. Interests and needs will be the basis for grouping and individual work assignments. No special fee. (6 cred.; prereq. industrial teaching experience; III-IV and VI-VII MTWThF; reference room and scattered work stations in TNUH) Nelson, McIntosh  
 107. **Coordination.** (3 cred.; prereq. 61 or either 105, 125, or equiv.; III MTWThF; 202TNUH) Widdowson  
 125. **Philosophy and Practice of Industrial Education.** (3 cred.; consent of instructor; not open to those with credit in 60, 61; I MTWThF; 202TNUH) Widdowson  
 200.\* **Research Problems.** (3-6-9 cred.; for graduates with approval of Master's candidacy, except those whose programs include thesis projects; individual conferences with advisers) Smith, Nelson

**Second Term**

102. **The General Shop.** (Not a shop course) (3 cred.; prereq. 80 or equiv.; I MTWThF; 202TNUH) Nelson

103. **Instructional Aids.** (3 cred.; prereq. 70 or 100 or equiv.; III MTWThF; 202TNUH) Nelson
110. **Vocational Guidance.** (3 cred.; prereq. Ed. 55B or equiv.; II MTWThF; 202TNUH) Smith
135. **Industrial Course Construction.** (3 cred.; not open to those with credit in 40, 42; prereq. consent of instructor; IV MTWThF; 202TNUH) Micheels
- 200.\* **Research Problems.** (See first term) Micheels, Smith

### Notes

See other parts of this bulletin for shop and drawing courses.

Copies of four-year curriculum (B.S. degree) and Master's degree patterns are available. Those interested in work toward the Ph.D. degree are invited to initiate correspondence or consultation as to their educational and experience backgrounds and their professional intentions.

College of Education and Graduate School bulletins are available from the Office of Admissions and Records, Administration Building.

Gaining admission to the Graduate School is a process that should be begun as early as possible. Request form blank from the Graduate School Office, Johnston Hall.

The Industrial Education Department offers courses approved in certification for strictly vocational teaching and other positions that are federally-aided, under provisions of the Smith-Hughes and George-Barden acts and allied regulations.

It may be necessary to limit enrolment in Ind. 106. Therefore, written notice of intention to enroll will be appreciated and helpful in planning.

## METHODS AND STUDENT TEACHING

### First Term

#### NURSING EDUCATION

- Ed.T.51A. **The Teaching of Nursing.** (2 cred.; prereq. Ed. 55B or 55N; open only to students who will also be registered for 2 credits in this course in the second term; see instructor; VI MWF; 207TSP) Boyle, Norris

#### ELEMENTARY EDUCATION

- Ed.T.77.† **Student Teaching in the Nursery School.** Five half-days each week spent in classroom participation under supervision. (3 cred.; prereq. approval of major adviser and director of student teaching; ar.) Fuller
- Ed.T.78.† **Student Teaching in the Kindergarten.** Five half-days each week spent in classroom participation under supervision. (3 cred.; prereq. approval of major adviser and director of student teaching; ar.) Headley

#### SECONDARY EDUCATION

- Ed.T.52.† **Student Teaching.** Open only to students who need a limited number of credits in student teaching to graduate at the end of the first summer term or to students who wish to qualify for the junior high school endorsement. (Limited to 40) (Cred. ar.; ar.; PeikH) Grim
- Ed.T.84A-B-C. **Practice and Field Work in Recreation Leadership.** (2 cred.; prereq. recreation majors; ar.; ar.) Fitzgerald
- Ed.T.85A-B-C. **Practice and Field Work in Recreation.** (2 cred. for majors, 1 cred. for minors; prereq. recreation majors or minors; ar.; ar.) Fitzgerald

† Students registering for this course must make out the application required for methods courses and student teaching. Forms are available in the office of the director of student teaching, 210C Burton Hall.

**Second Term****NURSING EDUCATION**

**Ed.T.51A. The Teaching of Nursing.** (See first term) (VI MWF; 207TSP)  
Boyle, Norris

**MUSIC EDUCATION***First Term*

- 50B. Teaching Music in the Intermediate Grades.** (2 cred.; prereq. 50A or equiv.; I MTWThF; 3ScH) Ar.
- 53. High School Methods.** (3 cred.; prereq. 50B, Ed. 55B; IV MTWThF; 3ScH) Ar.
- 60†-61-62. Supervision and Teaching of Music.** (3 cred.; sr.; prereq. 50B, 53, Ed. 55B, consent of instructor; VI-VII T; 4ScH) Ivory
- 150. Organization and Supervision of Vocal and Instrumental Music in Elementary Schools.** Practical problems in elementary school music; individual projects, group activities, general discussions; classroom management, techniques of supervision, scheduling, unit construction, instruments, repertory, others. (3 cred.; sr.; prereq. 6 cred. in music education, 9 cred. in music and 6 cred. in general education; II-III MTWThF; 4ScH) Ivory, others
- 224. Research Problems.** (3-9 cred.; grad.; prereq. consent of instructor; VII MW; 2ScH) Ivory
- 225E. Advanced Applied Music.** (2-4 cred.; prereq. entrance exam.; ar.; ar.) Ar.

*Second Term*

- 50A. Teaching Music in the Primary Grades.** (2 cred.; jr.; prereq. Music 1; V MTWThF; 4ScH) Jung
- 50B. Teaching Music in the Intermediate Grades.** (See first term) (III MTWThF; 4ScH) Jung
- 103. Psychological Foundations of Music Education.** (3 cred.; sr.; prereq. consent of instructor; IV MTWThF; 3ScH) Jung
- 115. Instrumental Workshop.** Practical problems in orchestra and band directing, organization and management; individual projects, group activities, general discussions, conducting, repertory, scheduling, arranging, others. (3 cred.; jr., sr., grad.; prereq. 53 and Ed. 55 or consent of instructor; I-II MTWThF; 4NMA) Ivory, Jung
- 224. Research Problems.** (See first term) (V MW; 2ScH) Ivory
- 225E. Advanced Applied Music.** (See first term) Ar.

**PHYSICAL EDUCATION FOR MEN***First Term*

**Phys.Ed.1B. Sports Education.** (1 cred.; no prereq.) Bolstad

Sec. 1, Beginning Golf, V-VI MWF, Golf Course  
2, Advanced Golf, V-VI TThF, Golf Course

- Phys.Ed.6A. Soccer, Speedball, Volleyball.** (1 cred.; no prereq.; I MTWThF; CH) Kulbitski
- Phys.Ed.7A. Active and Social Games.** (1 cred.; no prereq.; II MTWThF; CH) Kulbitski
- Phys.Ed.7C. Recreational Sports.** (1 cred.; no prereq.; III MTWThF; CH) Kulbitski

† Students registering for this course must make out the application required for methods courses and student teaching. Forms are available in the office of the director of student teaching, 210C Burton Hall.

- Phys.Ed.9A. Folk Dancing.** (1 cred.; no prereq.; VII MTWThF; NGW) Piper
- Phys.Ed.50. 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.; no prereq.; IV MTWThF; 206CH) Osell
- Phys.Ed.55. 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.; prereq. 6 cred. in activity courses; VI MTWThF and 5 hours per week ar.; CH) Piper
- Phys.Ed.73†-74-75. Directed Teaching.** Actual practice in teaching physical education activities. (2 cred. each; prereq. 55, Ed. 55A-B, junior comprehensive tests, C plus average in major courses, and consent of director of student teaching in the College of Education; 10 to 12 hours a week ar.; 220CH) Piper
- Phys.Ed.101. 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.; prereq. 32, 55, and 9 cred. of activity courses; III MTWThF; 215CH) Keller
- Phys.Ed.236. 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.; II MTWThF; 215CH) Nordly
- Phys.Ed.238. Administration of Physical Education in Colleges and Universities.** 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.; I MTWThF; 215CH) Keller
- Phys.Ed.241. The Administration and Supervision of Public Recreation.** The organization for recreation; policies and procedures relating to finance, program, facilities, office management, legislation, and public relations. (3 cred.; grad.; IV MTWThF; 215CH) Fitzgerald
- Phys.Ed.247.\* Problems in Health Education, Physical Education, and Recreation.** Individual projects and conferences related thereto. (Cred. ar.; grad.; V MTWThF; 214CH) Nordly
- Phys.Ed.261A. Seminar in Contemporary Problems in Physical Education.** Presentation of problems by class members; readings, discussions, problems selected for individual study. (3 cred.; grad.; IV MTWThF; 214CH) Nordly

### Second Term

- Phys.Ed.2B. Sports Education.** (1 cred.; no prereq.) Piper  
 Sec. 1, Tennis, III-IV TTh and 2 hrs. ar., Tennis Courts  
 2, Swimming, VIII MTWThF, CH
- Phys.Ed.8. Tennis and Golf.** (1 cred.; no prereq.; III-IV MWF; CH) Piper, Bolstad
- Phys.Ed.9B. Square and Social Dancing.** (1 cred.; no prereq.; VII MTW, VIII-IX Th; NGW) Piper
- Phys.Ed.51. 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. anatomy; III MTWThF; 206CH) Osell
- Phys.Ed.111. Recreation Areas and Facilities.** Latest material on recreation facilities and areas. Problems of maintenance, equipment standards, and purchasing of supplies and equipment. (3 cred.; sr., grad.; III MTWThF; 215CH) Fitzgerald

† Students registering for this course must make out the application required for methods courses and student teaching. Forms are available in the office of the director of student teaching, 210C Burton Hall.

- Phys.Ed.121. Principles of Recreation Methods.** This course studies recreation technique and methods as applied to the individual leader, the group, the community, and to all the areas in community recreation—the arts and crafts, music, drama, nature, social activities, and games and sports. (3 cred.; prereq. Ed.T. 84A-B-C, Ed.T. 85A-B-C; IV MTWThF; 215CH) Fitzgerald
- Phys.Ed.155. Instructional Aids in Health, Physical Education, and Recreation.** A survey and evaluation of instructional materials in these fields with emphasis on audio-visual aids; lecture and laboratory. (3 cred.; sr., grad.; V-VI MTWThF first 4 weeks; 215CH) Piper
- Phys.Ed.233. Administrative Problems in Physical Education in Secondary Schools.** (3 cred.; grad.; I MTWThF; 215CH) Nordly
- Phys.Ed.234. The Secondary School and College Curriculum in Physical Education.** Theory and principles of curriculum construction applied to physical education. Practical application in constructing a curriculum. (3 cred.; grad.; II MTWThF; 215CH) Nordly

## PHYSICAL EDUCATION FOR WOMEN

### 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 to make an appointment for a physical examination at the Health Service. Health Service approval must be secured for participation in activity classes.

### Fees

The rental fee for suits and towels for open swimming is 20 cents. There will be a nominal fee charged for the use of the tennis courts and the golf course. Towels for shower baths may be procured from the matron for 10 cents apiece.

### Facilities for Recreation

The swimming pool is open for recreational use from 2:00 to 4:00 p.m. Monday through Friday during both terms.

The university tennis courts and the university golf course are open to students at a nominal fee.

### 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 this summer to the state minor in physical education are: Phys.Ed. 5, 18, 33, 37, 83, 84
2. Courses applying this summer to the undergraduate major in physical education are: Phys.Ed. 5, 18, 33, 37, 83, 84, 114, 135.
3. Courses applying to advanced and graduate degrees with a major in physical education are: Phys.Ed. 113, 114, 115, 118E, 135, 224; also certain courses over 100 in Physical Education for Men.

### Student Teaching

The opportunity of teaching in the University Demonstration School is presented to those who find it possible only in the Summer Session to satisfy the student teaching requirement of the minor. 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.

### First Term

- Phys.Ed.5.† Methods of Coaching and Conducting Organized Games for Junior and Senior High Schools.** Special techniques for team games such as field ball, speed ball, soccer, volleyball, basketball, and softball. Organization of tournaments suited to various games, play days, methods of teaching. (2 cred.; practical work I MWF, lect. I TTh; 151NGW) Hauptfuehrer
- Phys.Ed.18.† Elementary Folk Dancing, Games, and Methods.** Graded folk dances and games usable at the elementary and secondary levels; teaching methods suited to the different age levels and the content will be discussed and experienced. (2 cred.; no prereq.; practical work VII MWF, lect. VII TTh; 151NGW) Marr
- Phys.Ed.33.† Intermediate Swimming and Methods.** For those who can swim in deep water. Instruction includes: the crawl, side stroke, back crawl, breast stroke, personal water safety skills, diving. The class will be divided into groups according to ability, interests, and experience of the swimmers. Methods will be treated from the standpoints of high school and college groups. (2 cred.; prereq. consent of instructor; VI MTWThF; 58NGW) Eibner
- Phys.Ed.37. Individual and Dual Games and Methods.** Deals with the various methods and techniques suitable for the teaching of the following sports: table tennis, archery, badminton, bowling, 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 levels. (2 cred.; no prereq.; practical work II MWF, lect. II TTh; 153NGW) Hauptfuehrer
- Phys.Ed.113. Physical Education in the Elementary Schools.** The course deals with the elementary school child, with curriculum, with adaptations of instructional procedures necessary in the elementary grades, with problems of classification and evaluation, and with the influence of modern educational thinking upon problems commonly met at this level. (3 cred.; prereq. consent of instructor; III MTWThF; 3NGW) Baker
- Phys.Ed.115. Recent Literature and Research in Mechanics of Movement.** An analysis of techniques of mechanics and kinesiology of movement; consideration of a variety of skills as well as those of particular interest to the class; an evaluation of pertinent methods and devices used in current research; an application of analyses and evaluations to an individual project. (3 cred.; prereq. undergraduate course in kinesiology or consent of instructor; VI MTWThF; 3NGW) Wilson
- Phys.Ed.118E.§ Problems in Teacher Education in Health, Physical Education, and Recreation.** For M.Ed. students who are interested and participating in the conduct and development of professional teacher education programs in the fields of school health education, physical education, and the recreational function of physical education. Individual projects and conferences. (3 cred.; prereq. consent of departmental graduate advisers) Staff
- Phys.Ed.135. Tests and Measurement in Physical Education.** The course presents a critical analysis of existing and needed testing procedures in physical activities for elementary school children and for girls and women. Pertinent skill and knowledge tests examined and evaluated for practical use; application of test construction technique culminating in an individual problem. (3 cred.; prereq. Ed.Psy. 60 or equiv., consent of instructor; IV MTWThF; 3NGW) Wilson
- Phys.Ed.224.\* Research Problems in School Health Education and Physical Education for Women.** Individual problems and conferences. (Cred. ar.; consent of departmental graduate advisers) Staff

† Health Service approval must be secured for participation in this course.

§ Courses marked "E" carry credit toward the degree of master of education.

**Second Term**

- Phys.Ed.12. Social Recreation—Ballroom and American Country Dance.** 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.; VII MTWTh; 151NGW) Ar.
- Phys.Ed.83. Methods and Materials of School Health Education.** For persons interested in school health education in elementary and secondary schools. Consideration is given to methods, materials, principles, and evaluation in school health education programs. Opportunity is given for the study of individual problems. (3 cred.; prereq. consent of instructor; VI MTWThF; 201NGW) Ericson
- Phys.Ed.84. The Physical Education Program for the Elementary and Secondary Schools.** A study of current curricular problems in the field of physical education with emphasis on both elementary and secondary levels. Individuals will be given the opportunity of working on special program problems of concern to them. (3 cred.; prereq. experience on elementary or secondary levels or consent of instructor; III MTWThF; 3NGW) Jaeger
- Phys.Ed.114. School Health Education Program.** A study of the program of health education in public elementary and secondary schools with special reference to curriculum construction, health supervision and guidance, relationships between the public schools and governmental health organizations and agencies, and evaluation of the school health program. Students are given guidance in the solution of individual professional problems. (3 cred.; sr., grad.; prereq. 83, Public Health 50 or equiv. or consent of instructor; IV MTWThF; 201NGW) Ericson

# SCHOOL OF BUSINESS ADMINISTRATION

## GENERAL INFORMATION

### Admission

For admission to the School of Business Administration a student must have satisfied the requirements as listed in one of the two-year prebusiness courses in either the College of Science, Literature, and the Arts, the Institute of Agriculture, or the Institute of Technology. These requirements may be completed at another institution. 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.

Courses fulfilling the requirement of independent work and the preparation of written reports for the Master's degree, Plan B, shall be of graduate level and shall be made part of an approved program only upon recommendation of the candidate's adviser and the instructor for the course.

### First Term

**Econ.3. Elements of Money and Banking.** Basic principles of money and a description of the various types of financial institutions, their functions and relation to the whole economic organization. (3 cred.; no cred. if B.A. 57 completed; 2nd and 3rd qtr. fr., soph., jr., sr.; no prereq.; III MTWThF; 2VH) Sutton

**Econ.5. Elements of Statistics.** Elementary concepts in statistical methods: averages, ratios, errors, sampling, index numbers, graphic representation, collection of material. (3 cred., no cred. if B.A. 70 or Sociology 45 completed; 3rd qtr. fr., soph., jr., sr.; no prereq.; I MTWThF; 2VH) Sauerlender

**Econ.6. 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. (3 cred.; soph., jr., sr.; no prereq.; IV MTWThF; 207VH) McKenna

**Econ.24. Principles of Accounting.** The balance sheet, profit and loss statement, the recording process, special journals, control accounts, adjustments, closing entries, work sheet, and the voucher system. (3 cred., no cred. if B.A. 54 completed; 3rd qtr. fr., soph.; no prereq.; II MTWThF; 306VH) Nelson

- Econ.50. Insurance Principles.** 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. 7 or equiv.; I MTWThF; 207VH) Williams
- B.A.65. Analysis of Financial Statements.** Interpretation and analysis of financial statements. Credit, investment, and managerial analysis of financial statements. Consolidated statements. Industrial, public utility, railroad statements. (3 cred., no cred. if B.A. 139 or 151 completed; jr., sr.; prereq. Econ. 26 or equiv.; II MTWThF; 6VH) Heilman
- Econ.73. Manpower Economics and Labor Problems.** Covers: (1) the marketing of manpower resources; (2) the institutional structure of labor markets; (3) economic and social problems arising out of labor marketing processes; (4) methods, procedures, and proposals for solving these problems. (3 cred., no cred. if Econ. 161 completed; jr., sr.; prereq. Econ. 7 or equiv.; I MTWThF; 1VH) Ulman
- B.A.74. Business Statistics.** Explanation and criticism of statistical techniques for dealing with time series; measurements of trend, seasonals, cycles; index numbers. Statistical control of quality in manufacturing operations. (3 cred., no cred. if B.A. 112 completed; jr., sr.; prereq. Econ. 5 or equiv.; III MTWThF; 6VH) Sauerlender
- Econ.75. Corporation Finance.** The corporation in comparison with other types of business units. Attention is given to such subjects as organization and capital structure, raising fixed and circulating capital, treatment of corporate earnings, incentives to and forms of combination, and trusteeship and re-organization. (3 cred., no cred. if Econ. 155 completed; jr., sr.; prereq. Econ. 3 and 7 or equiv.; III MTWThF; 205VH) Stehman
- Econ.80. Intermediate Economic Analysis: Income and Employment.** The determinants of national income, employment, and price level, with particular attention to aggregate consumption and investment. (3 cred., no cred. if Econ. 103-104 completed; jr., sr.; prereq. 20 cred. in social science including Econ. 7 or equiv.; I MTWThF; 6VH) McKenna
- Econ.85. Government Regulation of Business.** The economic aspects of legislation affecting the market processes. Topics studied include the economic origins of business limitations on free competition, the regulation of public utilities, the purposes and effect of anti-trust laws and laws relating to "unfair business practices," and government assistance to economic groups. (3 cred.; jr., sr.; prereq. Econ. 81 for majors, for others suitable background in law or political science or consent of instructor; IV MTWThF; 6VH) Wheeler
- Econ.103. Advanced Economic Theory.** An advanced course in general economic theory with special emphasis on the systematic development of the tools of modern economic analysis. (3 cred., no cred. if Econ. 80-81 completed; no cred. until Econ. 104 completed; jr., sr. with consent of instructor, grad.; prereq. 20 cred. in social science including Econ. 7 or equiv.; II MTWThF; 2VH) Boddy
- B.A.112. Time Series Analysis and Quality Control.** Covers: (1) the explanation and criticism of statistical techniques applied to time series analysis, (2) index numbers, and (3) statistical control of quality. (3 cred., no cred. if B.A. 74 completed; jr., sr. with consent of instructor, grad.; prereq. Econ. 5 or equiv.; III MTWThF; 6VH) Sauerlender
- B.A.114. Retail Store Management.** Comprehensive treatment of retailing principles and methods; relation of retailing to other parts of the economy; problems associated with the operation of stores of various types. (3 cred.; jr., sr., grad.; prereq. B.A. 77 or equiv.; II MTWThF; 205VH) Canoyer
- Econ.124. Economic Problems of Today.** A special survey of current economic problems and their analysis, designed for the nonmajor, and of particular interest to teachers who wish to broaden their knowledge and to be brought up to date in their teaching of social studies courses. The course is a logical

sequence to the several workshops in economic education held on the campus in recent years. (3 cred.; jr., sr., grad.; prereq. Econ. 7 or equiv.; IV MTWThF; 113VH) Smith

**B.A.139. Corporate Statements.** Preparation of corporate statements and analysis from management, investment, and credit viewpoint. Report required analyzing statement of an assigned corporation. (3 cred., no cred. if B.A. 65 or 151 completed; jr., sr. with consent of instructor, grad.; prereq. Econ. 26; II MTWThF; 6VH) Heilman

**B.A.146. Investments.** A general or "cross cut" survey of the external and internal factors influencing the prices of securities, and of the principles of an investment policy for the individual investor. Emphasis is placed upon objective analysis from source materials of factors explaining price differentiation. (3 cred.; jr., sr., grad.; prereq. Econ. 75 or equiv.; IV MTWThF; 205VH) Stehman

**B.A.150. Intermediate Accounting I.** Principles and procedures involved in the valuation of assets and the determination of periodic income. (3 cred.; jr., sr., grad.; prereq. Econ. 26 or equiv., Mathematics 20; IV MTWThF; 2VH) Heilman

**B.A.152. Cost Accounting.** The basic principles of cost accounting with special reference to the job order cost system. (3 cred., no cred. if B.A. 66 or 130 completed; jr., sr., grad.; prereq. Econ. 26 or equiv.; I MTWThF; 113VH) Wheeler

**Econ.155. The Modern Corporation.** Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporations. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations. (3 cred., no cred. if Econ. 75 completed; jr., sr. with consent of instructor, grad.; prereq. Econ 3 and 7 or equiv.; III MTWThF; 205VH) Stehman

**B.A.159. Advanced Accounting.** Branch accounting, consolidated statements, estates and trusts, concerns in financial difficulties, and other specialized problems. (3 cred.; jr., sr., grad.; prereq. B.A. 151; III MTWThF; 306VH) Nelson

**Econ.161. General Manpower Economics and Labor Problems.** Includes: (1) marketing of manpower resources; (2) institutional structure of labor markets; (3) economic and social problems arising out of labor marketing processes; (4) methods, procedures, and proposals for solving these problems. (3 cred., no cred. if Econ. 73 completed; jr., sr. with consent of instructor, grad.; prereq. Econ. 7 or equiv.; I MTWThF; 1VH) Ulman

**Econ.162. Labor Movements.** An analysis of the development of labor movements in Europe and the United States. An examination of the origins of labor movements, their growth, the problems faced under various forms of governments, and an analysis of the economic and social consequences of these developments. (3 cred.; jr., sr., grad.; prereq. Econ. 73 or 161; III MTWThF; 113VH) Ulman

**Econ.165. Current Trends in Industrial Relations.** This course meets once each week for one hour to discuss new developments in various phases of industrial relations. Discussion of trends, new problem areas, new research studies and findings, and other up-to-date happenings in industrial relations in management, unions, and the government. Sessions are led by staff members of the University's Industrial Relations Center who are actively engaged in research and consultation. (1 cred.; jr., sr., grad.; prereq. B.A. 167; ar.; ar.) Yoder and others.

- Econ.176. Introduction to International Economics.** The techniques of international economic analysis. The approach, while primarily theoretical, will indicate the relevance of the theory to current problems. The balance of payments, the foreign exchanges, free trade versus protection, techniques of trade control, international commercial policies, contemporary international economic problems and institutions. (3 cred.; jr., sr., grad.; prereq. Econ. 7 or equiv.; II MTWThF; 1 VH) Smith
- Econ.178. Economics of Consumption.** The nature of human wants, the origins and the personal distribution of money income and purchasing power, demand and price, standards and levels of living, relationship of consumption to the population problem and possibilities for improvement in the plane of consumption. (3 cred.; jr., sr., grad.; prereq. Econ. 7 or equiv.; I MTWThF; 205VH) Canoyer
- Econ.228. Seminar: Problems in Current Economic Theory.** (3 cred.; grad.; ar.; ar.) Boddy
- Econ.251. Seminar in Industrial Relations.** (3 cred.; grad.; ar.; ar.) Yoder
- B.A.259. Case Studies in Specialized Accounting.** (3 cred.; grad.; ar.; ar.) Wheeler

### *Second Term*

- Econ.3. Elements of Money and Banking.** (See first term) (II MTWThF; 6VH) Borak
- Econ.7. Principles of Economics.** (Continuation of Econ. 6) (3 cred.; soph., jr., sr.; prereq. Econ. 6; III MTWThF; 2VH) Ar.
- Econ.25. Principles of Accounting.** Bank reconciliation, interest and discount, notes and drafts, classification and codification of accounts, partnership organization, dissolution, profit sharing, goodwill, corporation accounting; stock, surplus, dividends, reserves, treasury stock, funds, and bonds. (3 cred., no cred. if B.A. 55 completed; soph.; prereq. Econ. 24 or equiv.; I MTWThF; 6VH) Lund
- B.A.58. Elements of Public Finance.** Public expenditures, revenues, debts, fiscal policy, and financial administration. This is a condensed course given especially for School of Business Administration students. (3 cred., no cred. if Econ. 189 or 191-192 completed; jr., sr.; prereq. Econ. 7 or equiv.; II MTWThF; 205VH) Heller
- Econ.64. Economics of Money and Banking.** Banking policy viewed from the social standpoint with primary reference to the problems of the Federal Reserve System. Selected problems in monetary policy; monetary reconstruction and monetary reform. (3 cred., no cred. if Econ. 142 completed; jr., sr.; prereq. Econ. 3 and 80 or equiv.; IV MTWThF; 1 VH) Heller
- B.A.66. Managerial Costs.** 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., no cred. if B.A. 130 or 152 completed; jr., sr.; prereq. Econ. 26 or equiv.; I MTWThF; 205VH) Reighard
- Econ.73. Manpower Economics and Labor Problems.** (See first term) (I MTWThF; 1 VH) Turnbull
- B.A.77. Survey in Marketing.** Descriptive analysis of: (1) marketing institutions and their control; (2) market areas; (3) marketing costs; (4) the operation of supply and demand in marketing. (3 cred., no cred. if Econ. 185 completed; jr., sr.; prereq. Econ. 7 or equiv.; III MTWThF; 1 VH) Lewis
- Econ.81. Intermediate Economic Analysis: Firms and Households.** The analysis of individual decision-making, by firms and households, under conditions of monopoly, competition, and monopolistic competition. (3 cred., no cred. if Econ. 103-104 completed; jr., sr.; prereq. 20 cred. in social science including Econ. 7 or equiv.; II MTWThF; 1 VH) Papandreou

- B.A.89. Production Management.** Location and layout of industrial plants; types of operating organizations; shop personnel; standards of operation; purchasing and inventory control; routing, scheduling, and dispatching of product; scientific management; practical problems in production control. (3 cred.; no cred. if B.A. 187 completed; jr., sr.; prereq. Econ. 7 or equiv.; IV MTWThF; 301VH) Mitton
- Econ.104. Advanced Economic Theory.** Advanced course in general economic theory with special emphasis on the systematic development of the tools of modern economic analysis. (3 cred., no cred. if Econ. 81 completed; jr., sr. with consent of instructor, grad.; prereq. Econ. 103; III MTWThF; 113VH) Papandreou
- B.A.113. Sales Management.** The major functions and responsibilities of sales executives including sales policies and planning, sales promotion, sales organization and channels of distribution, selection, training and compensation of salesmen, control of sales performance, sales budgets and cost control. Extensive use of case materials. (3 cred.; jr., sr., grad.; prereq. B.A. 77 or equiv.; IV MTWThF; 205VH) Lewis
- B.A.130. Managerial Cost Accounting.** Cost accounting and analysis from the point of view of its use by management in making decisions and setting policies, and in establishing controls over costs. (3 cred., no cred. if B.A. 66 or 152 completed; jr., sr. with consent of instructor, grad.; prereq. Econ. 26 or equiv.; I MTWThF; 205VH) Reighard
- Econ.142. Monetary and Banking Policy.** An advanced course in money and banking policy viewed from the social standpoint with primary reference to the problems of the Federal Reserve System. Selected problems in monetary policy, monetary reconstruction, and monetary reform. (3 cred.; no cred. if Econ. 64 completed; jr., sr. with consent of instructor, grad.; prereq. Econ. 3 and 80 or equiv.; IV MTWThF; 1 VH) Heller
- Econ.149. Business Cycles.** Analysis of factors involved in business fluctuations. Comparison of theories of their causes. Examination of proposals for the stabilization of employment, production, and capital formation. Introduction to the statistical data and methods of business forecasting. (3 cred.; sr., grad.; prereq. Econ. 64 or 142 or consent of instructor; I MTWThF; 2VH) Ar.
- B.A.151. Intermediate Accounting II.** Principles and procedures involved in the valuation of liabilities and stockholders' interests, formation and dissolution of partnerships, analysis of financial statements. (3 cred., no cred. if B.A. 65 or 139 completed; jr., sr., grad.; prereq. B.A. 150; II MTWThF; 2VH) Lund
- B.A.153. Cost Accounting.** (A continuation of B.A. 152) Procedures of a process cost system. An introduction to budgetary control, standard costs, and distribution cost accounting. Analysis and interpretation of cost data for specialized uses. (3 cred.; jr., sr., grad.; prereq. B.A. 152; III MTWThF; 205VH) Reighard
- Econ.161. General Manpower Economics and Labor Problems.** (See first term) (I MTWThF; 1 VH) Turnbull
- Econ.164. Labor Legislation: Collective Bargaining.** An analysis of: (1) the interrelationships between the development of labor organizations and the techniques they use to further their interests, and the actions and decisions of the executive, legislative, and judicial branches of the government; (2) the economic and social implications of issues arising in this area. (3 cred.; jr., sr., grad.; prereq. Econ. 73 or 161; II MTWThF; 113VH) Turnbull
- B.A.167. Introduction to Industrial Relations.** A survey of policy and practice in manpower management. The course provides a professional viewpoint toward major functions, including policy formulation, determination of labor needs, job analysis, recruitment, selection, training and safety, service rating, employment stabilization, collective bargaining, and wage and salary administration. (3 cred.; jr., sr., grad.; prereq. Econ. 73 or 161; III MTWThF; 6VH) Heneman

- B.A.184. Scientific Management in Industry.** The origin and development of the movement to apply the methods of science to the management of industrial enterprises; the effects upon individual plant management and the influence upon "rationalism" in industrial society. (3 cred., no cred. if B.A. 180G completed; sr., grad.; prereq. B.A. 89 or 187; I MTWThF; 301VH) Mitton
- Econ.185. Economics of Marketing.** Covers: (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., no cred. if B.A. 77 completed; jr., sr., grad.; prereq. Econ. 7 or equiv.; III MTWThF; 1 VH) Lewis
- B.A.187. Administration of Production.** This nontechnical course develops the production function of business from the general management viewpoint. Students satisfying the requirements may use this course as a prerequisite for any of the advanced courses for which B.A. 89 is a prerequisite. (3 cred., no cred. if B.A. 89 completed; jr., sr. with consent of instructor, grad.; prereq. Econ. 7 or equiv.; IV MTWThF; 301VH) Mitton
- Econ.189. Principles of Public Finance.** Public expenditures, revenues, debts, fiscal policy, and financial administration. Special attention is given to tax principles, practices, and policies. (3 cred., no cred. if B.A. 58 or Econ. 191-192 completed; jr., sr., grad.; prereq. Econ. 7 or equiv.; II MTWThF; 205VH) Heller

## 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 to parents on the care and training of children. The institute offers graduate and undergraduate courses and conducts a nursery school and kindergarten for demonstration and research purposes.

### Nursery School and Kindergarten

The Nursery School and Kindergarten will be in session from 8:00 a.m. to 12:00 noon, beginning June 16 and closing July 17. Applications for the enrolment of children will be received at the office of the institute. The fee will be \$35 for tuition, which includes orange juice and lunch at noon.

Responsibility for transportation to and from school must be taken by the parents.

#### First Term

- 40. **Child Training.** (3 cred.; soph., jr., sr.; prereq. Psychology 1-2; II MTWThF; 207NH) Cummings
- 80. **Child Psychology.** (3 cred.; jr., sr.; prereq. Psychology 1-2; I MTWThF; 207NH) Ar.
- 130. **Motor, Linguistic, and Intellectual Development of the Child.** (3 cred.; sr., grad.; prereq. 12 cred. in psychology or equiv.; I MTWThF; 202Pt) Brieland
- 141. **Behavior Problems in Older Children.** (3 cred.; sr., grad.; prereq. 12 cred. in psychology, educational psychology, or sociology; III MTWThF; 202Pt) Ar.
- 150. **Childhood Education.** Survey of early childhood education. (3 cred.; sr., grad.; prereq. 12 cred. in education; II MTWThF; 202Pt) Fuller
- 170. **Parent Education.** (3 cred.; sr., grad.; prereq. 15 cred. in psychology, education, home economics, or sociology; IV MTWThF; 202Pt) Cummings
- 270.\* **Readings and Research in Child Development.** Independent readings and reports in any field such as physical growth, mental development, social behavior, nursery school theory, parent education, etc., which meet the approval of instructor. (Cred. ar.; grad. students only; hrs. ar.) Staff

*The following courses, Ed.T. 77, Student Teaching in the Nursery School, and Ed.T. 78, Student Teaching in the Kindergarten, listed under Methods and Student Teaching, page 99 in the College of Education; Ed.C.I. 162, Laboratory in Nursery School and Kindergarten Instructional Practices, and Ed.C.I. 163, Plastic Materials, Story Telling, and Social Studies for Young Children, listed under Curriculum and Instruction, page 93 in the College of Education, are also offered by the Institute of Child Welfare.*

#### Second Term

- 131. **Personality, Emotional, and Social Development of the Child.** (3 cred.; sr., grad.; prereq. 12 cred. in psychology or equiv.; I MTWThF; 202Pt) Deno
- 132. **Later Childhood and Adolescence.** (3 cred.; sr., grad.; prereq. 12 cred. in psychology or equiv.; III MTWThF; 202Pt) Deno
- 140. **Behavior Problems in Younger Children.** (3 cred.; sr., grad.; prereq. 12 cred. in psychology, educational psychology, or sociology; IV MTWThF; 202Pt) Blodgett
- 143. **Problems of Mental Deficiency.** (3 cred.; sr., grad.; prereq. 12 cred. in psychology or equiv.; II MTWThF; 202Pt) Blodgett
- 270.\* **Readings and Research in Child Development.** (See first term) Staff

## LIBRARY INSTRUCTION

The Division of Library Instruction offers in cooperation with the Graduate School a program leading to the Master's degree with a major in library science. This is the only program preparing for full-time professional library work. In addition, the division offers, through the College of Education, a minor of 23 credits in library science to prepare students for part-time library work in connection with teaching. For requirements see the Library School bulletin.

After the spring quarter, 1953, students who have work in progress for the B.S. in L.S. degree or the B.S. with a major in library science may continue in the program, but must complete their degree work in a reasonable length of time.

Students who expect to enroll this fall for the Master's program with a major in library science and who do not meet the library science course requirements for admission are urged to register for Library Science 50, 63, 70, and 81 this summer.

Fees for the eight-week term include: tuition \$60, incidental fee \$14, total \$74; part-time tuition (4 credits or less) \$45, incidental fee \$14, total \$59.

### *8-Week Term, June 15-August 8*

- Lib.Sci.50. Libraries and Society.** History and types of libraries, agencies, and services; librarianship as a profession. (3 cred.; IV MWF and 1 hr. ar.; 115JohH) Shove
- Lib.Sci.53. School Library Management.** Principles and methods. (3-4 cred.; VI MWF and 1 hr. ar.; 113JohH) Marfell
- Lib.Sci.61. Library Practice.** The time and character of the practice will be individually arranged to suit student aptitudes and needs. (3 cred.; prereq. 18 cred. in library science or satisfactory library experience; ar.) Sullivan
- Lib.Sci.63. Reference II.** Reference work in subject fields; the reference department; practical bibliography. (3 cred.; prereq. 62 or consent of instructor; III MWF and 1 hr. ar.; 114JohH) Fulmer
- Lib.Sci.70. Reading Guidance.** The library user, his personality and background; the matching of book and user. (3 cred.; no prereq.; II MWF and 1 hr. ar.; 114JohH) Fulmer
- Lib.Sci.74. Library Materials in the School's Instructional Program.** (2 cred.; no prereq.; II TTh and 1 hr. ar.; 114JohH) Fitch
- Lib.Sci.81. Bibliographical Description of Library Materials.** The description of books and other materials in bibliographies and library catalogs. (3 cred.; no prereq.; I MWF and 1 hr. ar.; 313JohH) Wallin
- Lib.Sci.152. History of Printing to Modern Times.** The development of printing and the publishing industry, 1500 to the present. (2 cred.; no prereq.; III TTh and 1 hr. ar.; 114JohH) Shove
- Lib.Sci.157. School Library Problems.** Service in large units, relationships with public libraries, planning library quarters, budgets, standards and evaluation. (3 cred.; prereq. consent of instructor; VI MWF, 122JohH) Fitch
- Lib.Sci.171. Reading Guidance for Children.** Factors affecting the reading interests and needs of children, and principles of guidance in children's literature. (3 cred.; prereq. 70 or concurrent registration; VII MWF and 1 hr. ar.; 113JohH) Fulmer
- Lib.Sci.185. Special Problems.** Individual study on library problems for advanced students in library science. (1 to 3 cred.; prereq. approval of adviser; ar.) Shove
- Lib.Sci.255.† Seminar in Library Administration.** (3 cred.; ar.) Stanford
- Lib.Sci.261.† Seminar in Advanced Bibliography.** (3 cred.; ar.) Shove
- Lib.Sci.271.† Seminar in Library Work with Children and Young People.** (3 cred.; ar.) Fitch

† This course is for five weeks only.

# GENERAL COLLEGE

## GENERAL INFORMATION

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. The college offers a program of general education which provides a background for adult activities. Students who do not qualify for admission to other colleges of the University because of inadequate preparation or poor high school record may also demonstrate their ability to handle work of college caliber through a careful selection of courses in the General College. Students who successfully demonstrate their ability may make application to transfer to another college of the University without undue loss of time or credit.

The degree of associate in arts is conferred by the University upon students who successfully complete a two-year program in the General College.

The regular *Bulletin of the General College*, 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, general regulations, and additional general information. All students entering the General College for the first time are required to take an over-all comprehensive examination, the results of which will be useful to the student and his adviser in planning his program for subsequent quarters.

For more complete description of the courses during the summer terms, see the regular *Bulletin of the General College*.

### First Term

- 8. Applied Mathematics.** Deals with the application of elementary mathematics to real problems. Measurement, estimation, slide rule calculation, writing and using formulas are stressed. (3 cred.; all; no prereq.; I MTWThF, 209NH; V T, 216NH) J. M. Harris
- 10A. Human Biology: The Fundamental Similarities in the Living World.** A study of the variety and relationship of living organisms serves to illustrate the general principles in biology. Special emphasis is given to man's place in the world of living organisms. Man's embryonic development, heredity, racial characteristics, and evolution are considered. Films and demonstration laboratories supplement the lectures. (3 cred.; all; no prereq.; II MTWThF; 213NH) Cieslak
- 10C. Human Biology: Healthful Living.** The preservation and improvement of health is emphasized in this course. Such topics as cause and prevention of disease, dieting, care of skin and hair, pregnancy, mental health, medical costs, and public health are considered. (3 cred.; all; no prereq.; IV MTWThF; 213NH) Cieslak
- 30E. Literature Today: An Introduction to World Literature.** The readings in world literature have been selected not simply because their authors are ancient or foreign but because they show how peoples from the earliest days have sought to understand problems that are essentially those of today. (3 cred.; all; no prereq.; III MTWThF; 213NH) Appel
- 31A. Writing Laboratory: Practice in Effective Writing.** The student's writing abilities are used as a basis for individual instruction in effective written expression. (3 cred.; all; no prereq.; III-IV MTWTh; 216NH) McCoy
- 44B. 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.; I MTWThF; 213NH) F. Harris

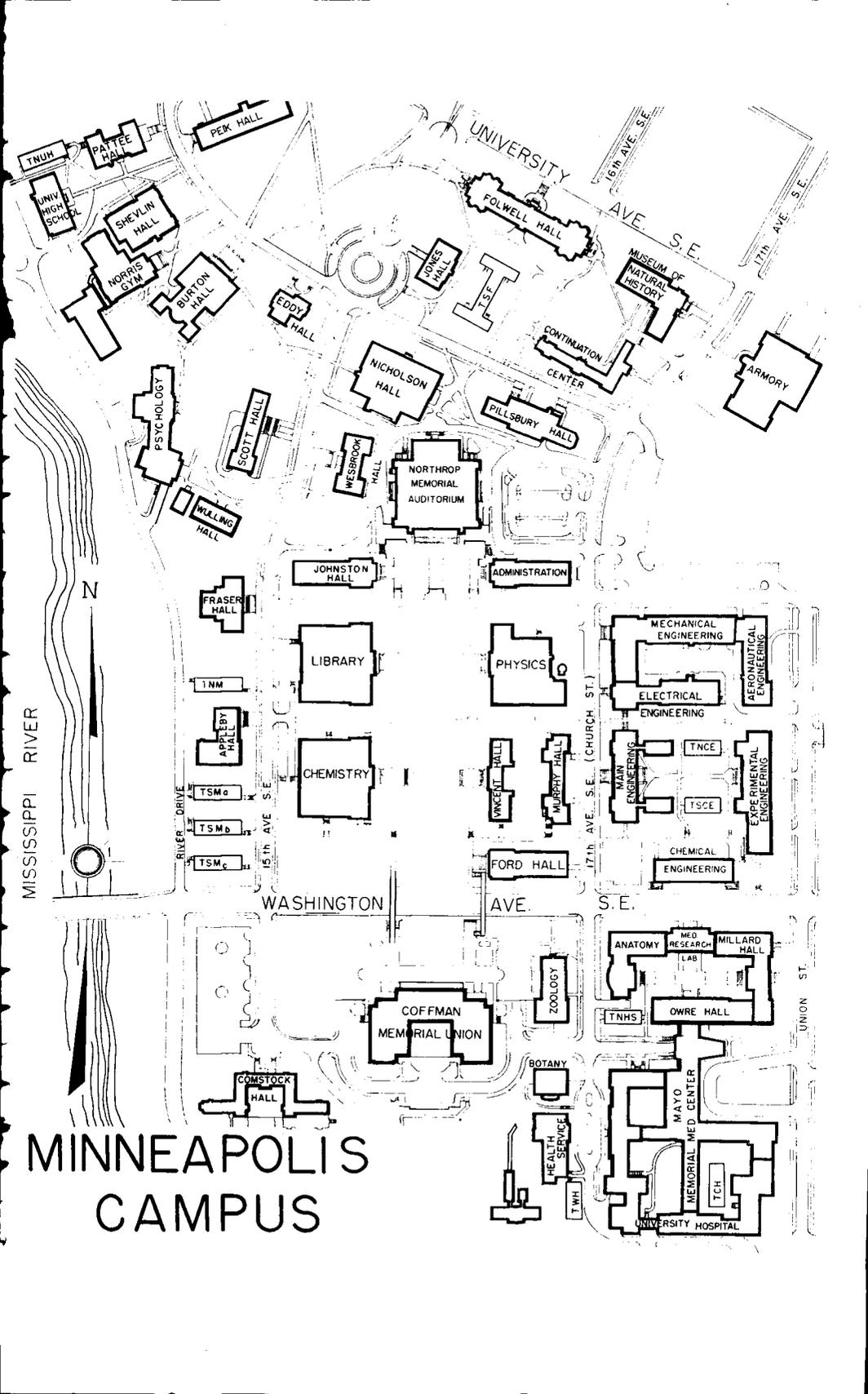
**Second Term**

- 10B. Human Biology: How the Living Machinery in Man Works.** This course deals with the body functions of man. The activities of cells, organs, and systems are considered from the point of view of both normal and abnormal physiology. (3 cred.; all; prereq. 10A; II MTWThF; 213NH) Dearden
- 31D. Writing Laboratory: Business Writing.** Attention centers on factors important for effective business writing. Business situations serve as a basis for the various types of letters the student writes. The student receives individual instruction as he plans and writes his letters. (3 cred.; all; prereq. 31A; III-IV MTWTh; 216NH) Sheldon
- 32A. Speech Laboratory: Basic Principles of Oral Communication.** 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.; I MTWThF; 107NH) Olson
- 37. Social Trends and Problems.** A study of the major trends which are affecting American life, and the impact of culture, conflict, religion, economic changes, population trends, and family status upon individual problems and development of personality. (3 cred.; all; no prereq.; III MTWThF; 213NH) Anderson

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MISSISSIPPI RIVER

# MINNEAPOLIS CAMPUS

UNIVERSITY

AVE. S.E.

WASHINGTON

AVE.

S.E.

UNION ST.

N

RIVER DRIVE

15th AVE S.E.

17th AVE. S.E. (CHURCH ST.)

UNIV HIGH SCHOOL

SHEVLIN HALL

NORRIS GYM

BURTON HALL

EDDY HALL

JONES HALL

FOLWELL HALL

MUSEUM OF NATURAL HISTORY

CONTINUATION CENTER

ARMORY

PILLSBURY HALL

NICHOLSON HALL

NORTHROP MEMORIAL AUDITORIUM

WESTBROOK HALL

SCOTT HALL

PSYCHOLOGY

WALLING HALL

JOHNSTON HALL

ADMINISTRATION

FRASER HALL

LIBRARY

PHYSICS

MECHANICAL ENGINEERING

ELECTRICAL ENGINEERING

RECREATION ENGINEERING

CHEMISTRY

APPEBY HALL

TSM a

TSM b

TSM c

VINCENT HALL

MURPHY HALL

MAIN ENGINEERING

TNCE

EXPERIMENTAL ENGINEERING

CHEMICAL ENGINEERING

FORD HALL

ANATOMY

MED RESEARCH LAB

MILLARD HALL

COFFMAN MEMORIAL UNION

ZOOLOGY

TNHS

OWRE HALL

COMSTOCK HALL

BOTANY

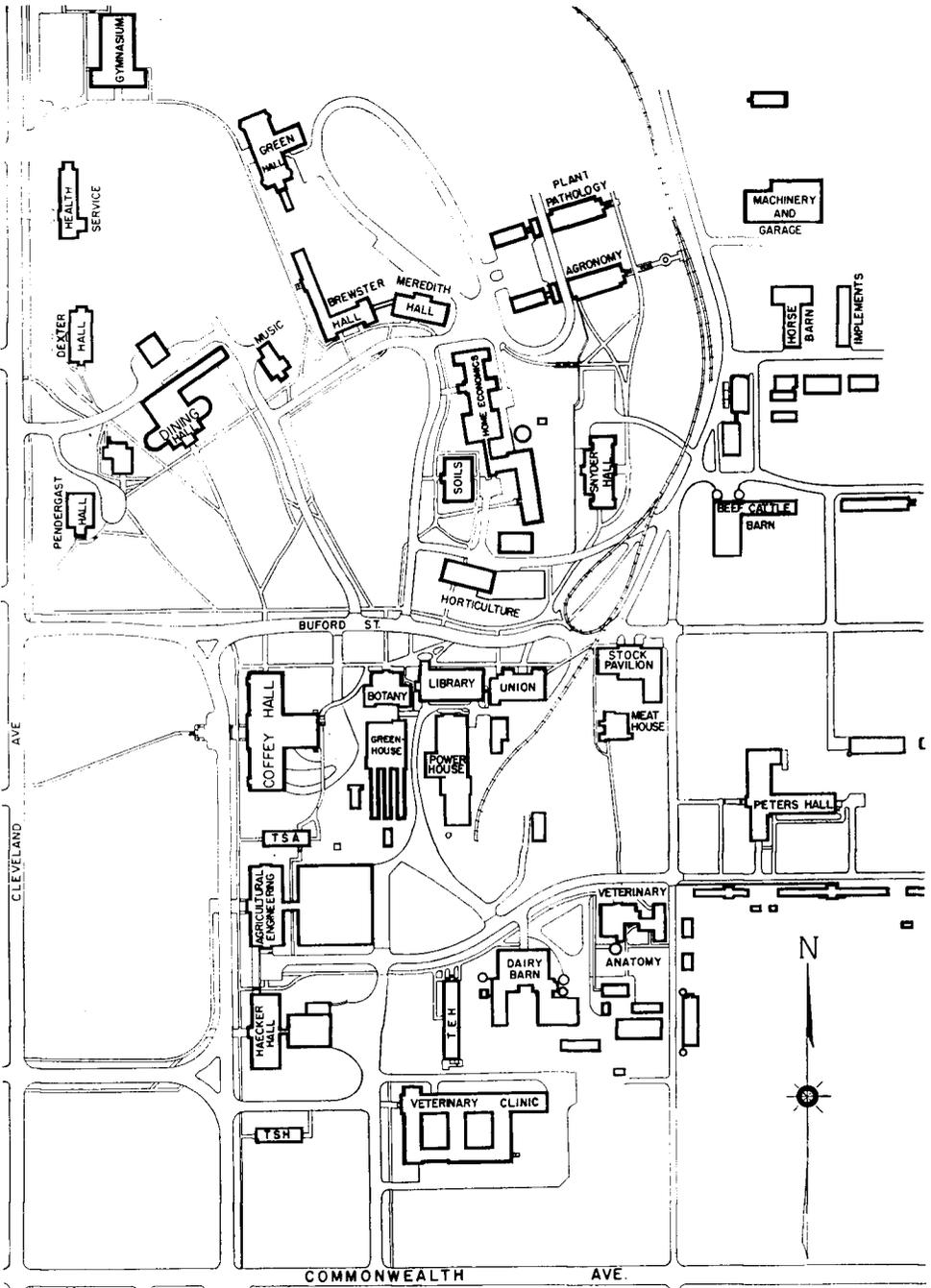
HEALTH SERVICE

TWH

MAYO MED CENTER

TCH

UNIVERSITY HOSPITAL



COMMONWEALTH AVE.

# ST. PAUL CAMPUS

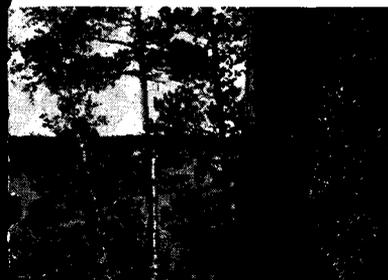


*Bulletin* OF THE  
UNIVERSITY  
OF  
MINNESOTA



<sup>6/2/53</sup>  
*Itasca Forestry and  
Biological Station*

summer session 1953



JULY 20  
to  
AUGUST 22

**FOREWORD**

This is a cordial invitation from the Biological Station Summer Session at Lake Itasca to you as

✻✻ **undergraduate students** interested in advanced study and research in the biological subjects and to those interested in the natural sciences but who have not found their field of major interest, to obtain help in orientation—

✻✻ **graduate students** who are looking for an excellent field laboratory for research—

✻✻ **teachers** of all phases of biology in all schools and colleges for advanced study and improvement through independent research, and to obtain training for conducting field classes—

✻✻ **students of wildlife management** for study in life histories and ecology—

✻✻ **students contemplating careers in agricultural extension work** who are interested in training in conservation and nature study—

✻✻ **and independent research workers—**

to make use of the unusual natural facilities combined with the planned laboratory equipment for study with outstanding instructional scientists.



Thorvald Schantz-Hansen  
Director of Biological Station

**GENERAL  
INFORMATION**  
LOCATION

The University of Minnesota Itasca Forestry and Biological Station is on the east shore of Lake Itasca in Itasca State Park—just a mile from the headwaters of the Mississippi River in northwestern Minnesota.

**SPONSORSHIP**

Sponsored by the Summer Session, the Station is a joint enterprise of various departments of the College of Science, Literature, and the Arts and of the College of Agriculture, Forestry, and Home Economics under the management of a resident director.

*Virgin red pine with an  
understory of balsam fir*

*(Note the deer browse-  
line on the balsam.)*



**TRANSPORTATION**

Public transportation to the Station is by bus to Douglas Lodge—about four miles from the Station. Students are picked up at the Lodge by Station transportation.



*Class in aquatic botany*

**MAIL**

Mail for students should be addressed to: Biological Station, Arago, Minnesota.

**INQUIRIES**

Requests for bulletins and other information relating to the Summer Session not specifically channeled elsewhere should be addressed to the Dean of the Summer Session, 830 Johnston Hall, University of Minnesota, Minneapolis 14. (See pages 5 and 10.)

**FIELD STUDY OPPORTUNITIES**

The Park—one of Minnesota's more primitive areas—is seven miles square and covers approximately 32,000 acres. Lakes, large and small, deep and shallow, of which Lake Itasca is the largest, cover approximately 5,000 acres and make possible a complete course in limnology.

Within easy reach of the research worker—in the forests, the dense swamps and open bogs—are beaver dams, eagle nests, turkey vulture roosts, and prehistoric Indian mounds. The Chippewa National Forest—one of the oldest and best developed in the United States—is only twenty miles to the east. About thirty miles to the west is the old Lake Agassiz basin. To the north, the 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.

Rare stands of virgin pine are still existent here. There are hardwood forests of oak, elm, hard and soft maple, white and yellow birch, large- and small-toothed aspen, balm of Gilead, basswood, and various other species. White, red and jack pine, white and black spruce, balsam, larch, and cedar are found in pure and mixed stands of various age classes.

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.

#### **COURSE WORK AND RESEARCH**

Both graduate and undergraduate students of biology will find an excellent field laboratory for research and course work.

Graduate students may pursue research problem work under supervision and guidance of staff without attending classes.

Students of wildlife management have the opportunity for the study of life history and ecology of vertebrates as well as basic courses in related fields.

To teachers of biology in high schools and colleges the Station offers opportunity for course work, advanced study and

*Students work on individual  
problems in ecology*



improvement through independent research. It will also provide the necessary training for conducting classes in the field.

Agriculture and home economics students contemplating careers in extension work will find this training in conservation and nature study useful preparation for rural extension work.

**GUEST  
INVESTIGATORS**

Qualified independent guest investigators may arrange with the director for research in various fields of terrestrial and fresh-water biology.

**FIELD SEASON  
ARRANGEMENTS**

Advanced students and research workers needing laboratory space and special equipment and those wanting to do research during



*Field collections are studied  
in the limnology laboratory*

the entire field season must make arrangements in advance with the director and the instructor involved. Each case will be judged individually.

**INSTRUCTIONAL  
FACILITIES**

There are seven laboratories located in three attractive buildings. Since most of the instruction is in the field the laboratories are not elaborate but they are adequate and well lighted.

A fine herbarium of the region, collections of insects and fungi, bird skins and small mammal skins are available for study.

The equipment includes all necessary compound and dissecting microscopes, binoculars, collecting equipment, various types of nets, row boats and launches, and the minor equipment and accessories for adequate instruction and research.

A library and administration building provides room for quiet study.

Necessary supplies and textbooks can be bought at the small bookstore.

**INQUIRIES  
REGARDING  
COURSES**

It is suggested that the student write one of the following professors who have been appointed to answer inquiries regarding courses, necessary texts, and equipment:

Professor A. Orville Dahl  
**Department of Botany**  
University of Minnesota  
Minneapolis 14, Minnesota

Professor William H. Marshall  
**Department of Entomology and Economic Zoology**  
Institute of Agriculture  
St. Paul 1, Minnesota

Professor Clyde Christensen  
**Department of Plant Pathology and Botany**  
Institute of Agriculture  
St. Paul 1, Minnesota

Professor Samuel Eddy  
**Department of Zoology**  
University of Minnesota  
Minneapolis 14, Minnesota

**BOARD AND  
LODGING**

**MEALS**

Meals are served to both on-campus and off-campus students in an attractive new dining hall located on the lake shore. It is operated by the administration in consultation with officers elected by students. Meals are carefully planned, well balanced, and prepared by experienced cooks. Fresh meat, vegetables, and fruit are served daily.

**CABINS**

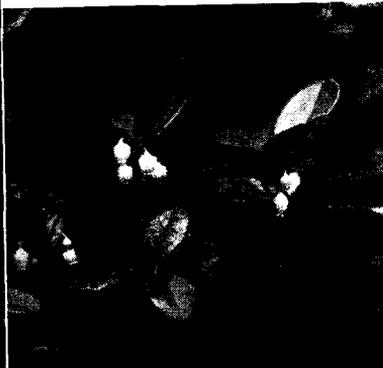
There are seven cabins for men, each accommodating eight students, and six cabins for women, each accommodating seven students. Women's cabins are equipped with toilets and lavatories. Two central bathhouses are located one near each of these groups. Laundry facilities are available in each of these bathhouses.

**PERSONAL NEEDS**

Students must provide their own bed linen, towels, and blankets. Since the nights are often cool, it is suggested that you bring two or three good wool blankets. Essential personal equipment should include suitable shoes or boots for field work, a field suit or dress, a warm jacket, a raincoat, heavy socks, a swimming suit, flashlight, desk lamp, notebooks, pocket field books, pencils, hand lenses, dissecting sets, pins, vials, and corks.

Students are asked not to bring trunks. There is no room to store trunks and there are no facilities for transporting them.

*One of the hundreds of fleshy fungi  
available for study  
(Amanitopsis vaginata)*



*Wintergreen  
(Caultheria procumbens)*

Grass Pink  
(*Calopogon pulchellus*)



Indian Pipe  
(*Monotropa uniflora*)



Students are expected to keep their own quarters clean and orderly.

You may bring your car but no garages are provided.

#### **RULES OF CAMP**

Rules of camp are kept at a minimum. Weekend absences and extended field trips must be reported in advance. Off campus, the State Park regulations govern.

#### **MARRIED STUDENT ACCOMMODATIONS**

Married students who wish to bring their families may find accommodations off campus in one of the many resorts in the vicinity or at the Park Service public camp ground which is about a mile from the Station where tenting or trailer space, water, fuel, ice, electricity, shower baths, and swimming beach are available. There are also a few cabins which can be rented for short periods. For further information write to the Director, care of the University of Minnesota Experimental Forest, Cloquet, Minnesota.

#### **RECREATION**

Swimming, fishing, boating, and hiking are relaxing counterbalances for a busy educational program. Social events in the

large assembly hall are handled by the students, with some guidance. Occasionally an interesting speaker is available.



*Limnology class dredges  
for lake bottom samples*

**HEALTH SERVICE** A two-ward, well-equipped infirmary, with a registered nurse in attendance, is available for the care of minor ills and injuries. Medical attention, when necessary, can be secured from Park Rapids or Bemidji. The payment of the incidental fee covers the cost of this service and entitles the student to medical service not to exceed a cost of \$10. Special services, such as X ray, infrared treatments, etc., and the cost of filling prescriptions must be paid by the student.

**ADMISSION AND  
REGISTRATION**

**ADMISSION**

Courses are open to all qualified graduate and undergraduate students who have had the usual preliminary courses in biological subjects. General rules for admission to the Summer Session apply to the Biological Station. Students with previous

college work who wish only to attend the Summer Session may do so without filing credentials, provided they are in good standing and are not candidates for a degree. Students are advised to consult these regulations in the general *Summer Session Bulletin*.

**GRADUATE SCHOOL**

Applications for admission to the Graduate School should be sent directly to the Dean of the Graduate School, University of Minnesota, Minneapolis 14, not later than June 22. Students not seeking graduate credit may register as special students.

Only courses numbered 100 or over carry graduate credit.

**REGISTRATION  
AND CREDIT**

Whenever possible students should complete their registration at the Office of Admissions and Records on either the St. Paul Campus or the Minneapolis Campus. In exceptional cases registration can be completed at the Station. G.I. and Rehabilitation students registering under the G.I. Bill (P.L. 346 or P.L. 16) must have the required authorization at the time of registration.

*A good catch of bluegills  
provides laboratory material*



Teachers who must report to their schools before the end of the session may complete their work ahead of schedule.

**NORMAL LOAD**

Two subjects are considered a 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 1 or 2 credits of a well-delimited research problem.

**RESERVATIONS**

The Station cabins accommodate ninety-two students. Reservations are required. *Reservation forms are not registration forms.* All reservations should be addressed to the College Office, Institute of Agriculture, St. Paul 1, Minnesota, not to the Office of Admissions and Records or individual departments. Priority of reservation will govern.

Instructional facilities accommodate an unlimited number of off-campus students.

**FEES AND EXPENSES**

The following fees are payable by each registrant on or before July 20:

Tuition fee .....	\$50.00
Incidental fee .....	10.50
Laboratory fee .....	10.00
	<hr/>
	\$70.50

**ROOM AND BOARD FEES**

A payment of \$10 must be made by each student to the Station director during the first week for dormitory and dining hall facilities.

Board is furnished at cost. An initial payment of \$60 is required to be made to the director of the Station on arrival. Additional payment may be called for if the cost exceeds the estimate. If there is a balance it will be refunded.

**TOTAL FEES**

The total cost of \$140.50 does not include travel or incidental personal expenses.

**LATE FEES**

Tuition and fees are payable at the time of registration on or before July 20. After July 20 late fees will be charged as follows:

Tuesday, July 21 .....	\$2.00
Wednesday, July 22 .....	3.00
Thursday, July 23 .....	4.00
Friday, July 24 .....	5.00

No registration will be accepted after July 24 without the approval of the director of the Station and the payment of the \$5 late fee.

**COURSES OF INSTRUCTION**

Other courses than those listed below and research problems may be arranged to suit individual needs.

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

**BOTANY**

Pl.Path.56. Introduction to the Study of Fungi. See Pl.Path.

112.‡ 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. 10 cred. in botany or zoology, or consent of instructor; WS) Fassett

116. 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. 10 cred. in botany or zoology or consent of instructor; TF) Fassett

131. Field Ecology. (Not offered in 1953)

136. Organisms, Microclimate, and Weather. Relations of organisms including man to microclimate and to weather with special emphasis on heat and temperature, moisture and wind. Lectures, laboratory, field work, and discussion. Term paper required. (4 cred.; prereq. 10 cred. in biology, botany or zoology, a course in physics recommended; TF) Lawrence

155. Fresh-water Algae. The taxonomy and limnological relations of the fresh-water algae of Minnesota. Text: Smith, *Fresh-water Algae of the United States*. (4 cred.; prereq. 10 cred. in biology, or consent of instructor; TF) Evans

Pl.Path.156. Advanced Study of Fungi. See Pl.Path.

157. Bryophytes and Pteridophytes. Field and laboratory study of the mosses, liverworts, ferns, and fern allies of Minnesota. Texts: Conard, *How to Know the Mosses*; Tryon, et al., *The Ferns and Fern Allies of Wisconsin* (obtainable from the Department of Botany, University of Wisconsin). (4 cred.; prereq. 10 cred. in biology, or consent of instructor; MTh) Evans

196.\*‡ Problems in Ecology, Taxonomy, Bryology, or Algology. Advanced studies based on individual field work and research. (Cred. ar.; advanced students with proper qualifications) Lawrence, Fassett, Evans

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

224.\* **Research Problems in Ecology.** (Cred. ar.; grad. students with proper qualifications) Lawrence

**ENTOMOLOGY  
AND ECONOMIC  
ZOOLOGY**

59. **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) Peterson

68. **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*; Burt, *Mammals of Michigan*; Breckenridge, *Reptiles and Amphibians of Minnesota*. Dissecting set and King's notebook required. Field glasses suggested. (4 cred.; prereq. Zool. 1-2-3 or equiv.; TF) (There will be a "cost basis charge" for mileage on field trips.) Marshall

124. **The Biology of Immature Insects.** A field and laboratory course treating of habits, habitat, life history, and identification of immature insects with particular emphasis on aquatic forms: Text: H. F. Chu, *How to Know the Immature Insects*. (4 cred.; prereq. 15 cred. in zoology and Ent. 52 or equiv. or consent of the Department of Entomology and Economic Zoology; WS) Peterson

162. **Ecology of Terrestrial Vertebrates.** Field work demonstrating methods of studying vertebrate populations and their relationship to local environments. Texts: Peterson, *A Field Guide to the Birds*; Burt, *Mammals of Michigan*; Breckenridge, *Reptiles and Amphibians of Minnesota*; and Hesse, Allee, and Schmidt, *Ecological Animal Geography*. Field projects, analyses, and lectures. (4 cred.; prereq. Ent. 68 or Zool. 57-58, and Ent. 63 or equiv. and Bot. 20; MTh) (There will be a "cost basis charge" for mileage on field trips.) Marshall

196.\* **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.; advanced students with proper qualifications) Marshall, Peterson

**PLANT  
PATHOLOGY  
AND BOTANY**

56. **Introduction to the Study of Fungi.** The structure, development, and identification of fungi, especially those of economic importance. (4 cred.; jr., sr.; prereq. 9 cred. in botany or consent of instructor; MTh) C. M. Christensen
156. **Advanced Study of Fungi.** General characters of fungi; especially those used in identification; cultural and taxonomic procedures and practices. (4 cred.; prereq. 9 cred. in botany or consent of instructor; MTh) C. M. Christensen
- 210.\* **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. Myc. 105-106-107) C. M. Christensen

**ZOOLOGY**

- 55.‡ **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) Eddy
- 107.‡ **Protozoology.** (Not offered in 1953)
- 115.‡ **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 zoology; WS) Eddy
- 119.‡ **Limnology.** A study of the conditions for life in the water and distribution of aquatic animals. Text: Welch, *Limnology*. (4 cred.; prereq. 15 cred. in zoology; MTh) Eddy
- 143.‡ **Animal Parasites.** Parasites of local fauna with special reference to helminths. (4 cred.; prereq. 15 cred. in zoology or consent of instructor; TF) Chandler
- 198.\* **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; advanced students) Eddy, Chandler

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

## RESEARCH PUBLICATIONS

The Station does not issue a series of publications. Results of research work carried on by the staff, guest investigators, and graduate students are published independently by the authors. The following list of publications indicates the type and scope of the research at the Station. Unpublished student theses are on file at the Graduate School of the University of Minnesota.

- CHRISTENSEN, C. M. Cephalosporium canker of balsam fir. *Phytopathology*, 27:788-91. 1937.
- HATFIELD, DONALD M. Studies on rodent population in a forested area. *Journal of Mammalogy*, 19:207-11. 1938.
- HINER, L. E. Observations on the foraging habits of beavers. *Journal of Mammalogy*, 19:317-19. 1938.
- KELL, L. L. The effect of the moisture-retaining capacity of soils on the forest succession in Itasca Park. *American Midland Naturalist*, 20:682-94. 1938.
- HODSON, A. C. Biological notes on the egg parasites of *Malacosoma disstria* Hbn., *Annals of the Entomological Society of America*, 32:131-36. 1939.
- HODSON, A. C. *Sarcophaga aldrichi* Parker as a parasite of *Malacosoma disstria* Hbn. in northern Minnesota. *Journal of Economic Entomology*, 32:396-401. 1939.
- MICKEL, CLARENCE E. and HERBERT E. MILLIRON. The Caddice-fly, *Limnephilus indivisus* Walker and its hymenopterus parasite *Hemiteles biannulatus* Grav. *Annals of the Entomological Society of America*, 32:515-80. 1939.
- BUELL, HELEN F. Further notes on communities of blue-green algae. *Torreya*, 40:32-33. 1940.
- BUELL, MURRAY F. and ROBERT L. CAIN. A Key to Woody Plants. Minneapolis: Burgess Publishing Company. 1940.
- CHRISTENSEN, CLYDE M. Observations on *Polyporus circinatus*. *Phytopathology*, 30:957-63. 1940.
- LEACH, J. G., A. C. HODSON, S. J. P. CHILTON, and CLYDE M. CHRISTENSEN. Observations on two ambrosia beetles and their associated fungi. *Phytopathology*, 30:227-36. 1940.
- HODSON, A. C. An Ecological Study of the Forest Tent Caterpillar, *Malacosoma disstria* Hbn. in Northern Minnesota. University of Minnesota Agricultural Experiment Station Technical Bulletin 148. 1941. 55 pages.
- MOYLE, J. B. A Field Key to Common Non-Woody Flowering Plants and Ferns of Minnesota. Minneapolis: Burgess Publishing Company. 1941.
- CHRISTENSEN, CLYDE M. A bluestaining fungus inhabiting the heartwood of certain species of conifers. *Phytopathology*, 32:735-37. 1942.
- CHRISTENSEN, CLYDE M. Two cases of unusual development of fruiting bodies. *Mycologia*, 34:400-402. 1942.
- ISHII, NOBUTARO. New parasite records from the ruffed grouse. *Journal of Parasitology*, 28:92. 1942.
- CHRISTENSEN, CLYDE M. *Common Edible Mushrooms*. Minneapolis: University of Minnesota Press. 1943. 124 pages.
- SKUDLARK, JOSEPH E. A comparative limnological study of two deep Minnesota lakes. M.A. Thesis. 1944.
- BUELL, MURRAY F. and W. E. GORDON. Hardwood-conifer forest contact zone in Itasca Park, Minnesota. *American Midland Naturalist*, 34:433-39. 1945.
- CHRISTENSEN, CLYDE M. *Keys to the Common Fleshy Fungi*. Minneapolis: Burgess Publishing Company. 1946. 45 pages.
- DAWLEY, CHARLOTTE W. Distribution of aquatic mollusks in Minnesota. *American Midland Naturalist*, 38:671-97. 1947.
- BUELL, MURRAY F. and ROBERT L. WILBUR. Life form spectra of the hardwood forests of the Itasca Park region, Minnesota. *Ecology*, 29:352-59. 1948.

- CHANDLER, ASA C. New species of the genus *Schistotaenia*, with a key to the known species. *Transactions of the American Mycological Society*, 67:169-76. 1948.
- HELLBERG, JEANNE M. Studies of the vertical distribution of plankton in Lake Itasca, Minnesota, during August 1947. M.S. Thesis. 1948.
- HOOPER, FRANK E. The summer standing crop of a small Minnesota lake. Ph.D. Thesis. 1948.
- LEE, FORREST B. A comparison of bird occurrence and activity in two climax forests at Itasca Park, Minnesota. M.S. Thesis. 1948.
- COLE, GERALD A. An ecological study of the microbenthic fauna of two Minnesota lakes. Ph.D. Thesis. 1949.
- CONWAY, VERONA M. The bogs of central Minnesota. *Ecological Monographs*, 19:173-206. 1949.
- HENDRICKS, HELEN A. The microfauna of the sandy beaches of three Minnesota lakes. M.A. Thesis. 1949.
- MALONEY, JOHN E. A study of the relationship of food consumption of the bluegill, *Lepomis macrochirus* Rafinesque, to temperature. M.S. Thesis. 1949.
- FREEMAN, REINO S. Notes on the morphology and life cycle of the genus *Monoecocestus* Beddard, 1914 (Cestoda: Anoplocephalidae) from the porcupine. *Journal of Parasitology*, 35(6):605-12. 1949.
- FREEMAN, REINO S. Temperature, oribatid mites and the development of *Monoecocestus* (Cestoda: Anoplocephalidae). *Journal of Parasitology*, 35(6):57. 1949.
- FASSETT, NORMAN C. The juvenile state of *Elymus canadensis*. *American Midland Naturalist*, 43:762. 1950.
- HODSON, A. C. What happens when trees lose their foliage in summer. *Minnesota Farm and Home Science*, 7:19. 1950.
- MARSHALL, WILLIAM H. Predation on shrews by frogs. *Journal of Mammalogy*, 32(2):219. 1951.
- MARSHALL, WILLIAM H. Accidental death of a porcupine. *Journal of Mammalogy*, 32(2):221. 1951.
- OWNBEY, GERALD B. Natural hybridization in the genus *Cirsium*—I. *C. discolor* (Muhl ex Willd.) Spreng. x *C. muticum* Michx. *Bulletin Torrey Botanical Club*, 78:233-53. 1951.
- QUIMBY, DONALD C. The life history and ecology of the jumping mouse, *Zapus Hudsonius*. *Ecological Monographs*, 21:61-95. 1951.
- SPIETH, HERMAN T. The breeding site of *Drosophila laticola* Patterson. *Science*, 113(2931):232. 1951.
- CHANDLER, ASA C. Studies on *Metacercariae* of *Perca flavens* in Lake Itasca, Minnesota. *American Midland Naturalist*, 45:711-21. 1951.
- CHRISTENSEN, CLYDE M. *The Molds and Man*. Minneapolis: University of Minnesota Press. 1951. 244 pages.
- FASHINGBAUER, B. A. The effects of defoliation by the forest tent caterpillar, *Malacosoma disstria*, Hbn.: and spraying for the control of the forest tent caterpillar upon bird life; and the effect of spraying for the control of the forest tent caterpillar upon amphibians. M.S. Thesis. 1951. 221 pages.
- ABDEL-MALEK, E. Menthol relaxation of helminths before fixation. *Journal of Parasitology*, 37:321. 1951.
- BUELL, MURRAY F. and J. E. CARTON. A study of forest stands in Minnesota with an interpretation of the prairie-forest margin. *Ecology*, 32:294-316. 1951.

