

The Bulletin of the
University of Minnesota



summer
session
courses

preliminary announcement

1948

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This is a preliminary announcement of courses to be offered in the 1948 Summer Session of the University of Minnesota. It is subject to revision and change to conform with the developments in the educational needs of a fluctuating enrollment. We hope that you will read this bulletin and pass it on to any of your friends who may be interested.

We call your special attention to the programs on the Scandinavian Area and American Studies.

The complete Summer Session Bulletin will be issued in March and copies of that bulletin or additional copies of the Preliminary Bulletin may be obtained by addressing the Dean of the Summer Session, 350 Administration Building, University of Minnesota, Minneapolis 14, Minnesota.

Vol. LI

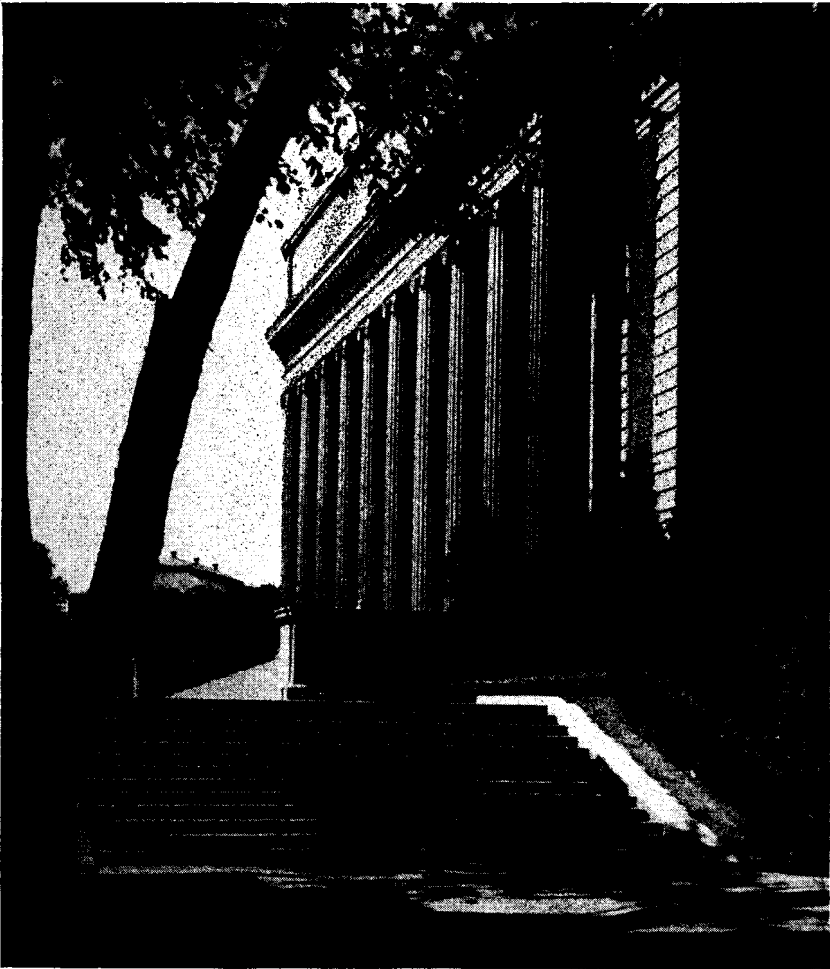
No. 1

January 5, 1948

THE SUMMER SESSION FOR 1948

The experience of the war years clearly demonstrated the practicability of study in the summer months. The Summer Session offers opportunity to supplement and augment the work of the regular year and to shorten the over-all period of residence prior to qualification for a degree.

The University of Minnesota enters now upon its fifty-sixth year of this supplementary service. The Summer Session has grown from a handful of registrants to a thriving institution of thousands of students—much larger than the regular sessions of many of our universities of a decade ago.



Colonnade, Northrop Memorial Auditorium

SCANDINAVIAN AREA STUDIES

In the fall term of 1947, the University of Minnesota began an enlarged program of study of the Scandinavian countries under the direction of the Committee for Scandinavian Area Studies. It is designed to meet the needs of students interested in careers in public service, journalism, and foreign commerce and business, as well as of those preparing for scholarships and teaching. Advanced work is offered on a broad and inclusive "area and language" basis. The work includes courses, special lectures, and seminars in the history, the social, economic, and political institutions, and the arts, languages, and literature of the Scandinavian countries, with the student concentrating much of his time in the field of his special interest. This work will continue during the Summer Session. Among the visiting teachers will be Professor Einar Haugen of the University of Wisconsin and Mr. Arne Andersson of Social-institutet of Gothenburg, Sweden. It is planned to offer courses in the Scandinavian languages, a seminar on modern methods of teaching the Scandinavian languages, courses on Ibsen and other outstanding figures of literature, on Kierkegaard and Scandinavian philosophy, on the economic and social institutions and policies, and on the history of Scandinavia, including a special course on Scandinavian culture in the Viking age and the early middle ages. In this summer, too, Swedish Americans will celebrate the one hundredth anniversary of their coming to the Middle West. Special community programs are being arranged and there will be a group of distinguished visitors from Sweden.

PROGRAM IN AMERICAN STUDIES

The Summer Program in American Studies, with a distinguished staff of visiting and resident professors, will continue in 1948. The purpose of the program is to guide students to a broad knowledge of their own nation, as preparation for enlightened citizenship both in the United States and in world society.

Departmental and interdepartmental courses, by resident and visiting professors, will be offered in national history, literature, arts, philosophy, journalism, political science, anthropology, human geography, and sociology.

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

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

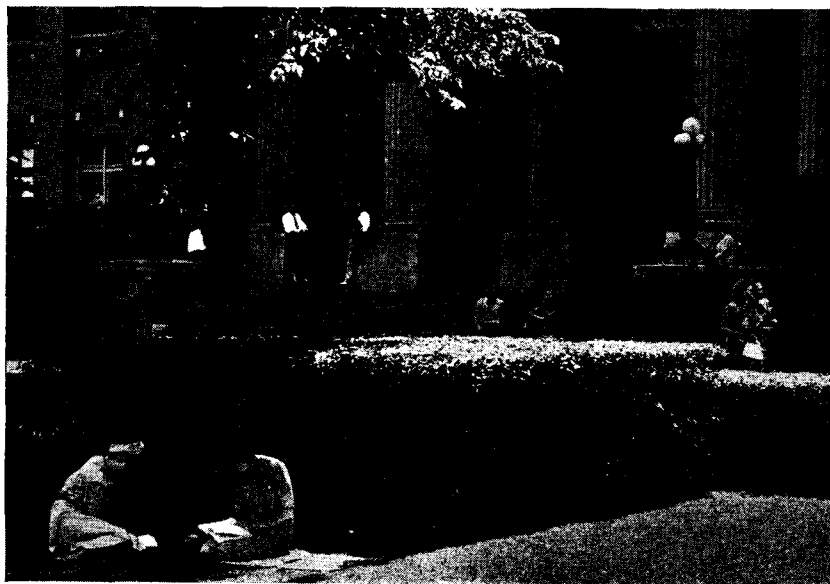
GENERAL INFORMATION

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

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

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

Courses in the various fields of biology are given at the Lake Itasca Forestry and Biological Station, located at Itasca State Park, during the second term of the Summer Session. (See page 23.)



The University Library from the Mall



Comstock Hall

DATES OF THE SUMMER SESSION

The Summer Session consists of two terms. The first term of six weeks will begin with registration Monday and Tuesday, June 14 and 15. Accelerated programs are continuous through both terms. Other courses of study are complete in a single term. First term classes on the Minneapolis Campus will begin Wednesday, June 16, at 8:00 a.m. Classes on the St. Paul Campus will begin fifteen minutes earlier, at 7:45 a.m.

Registration and payment of fees for the second term close at 4:00 p.m. on Monday, July 26, and classes for this term will open Tuesday, July 27. Students registered for both terms on an accelerated program who did not pay the full quarter fee at the beginning of the first term will pay the second term fee. The Summer Session will be brought to a close on Friday, August 27.

FACULTY

The instructional staff for the 1948 Summer Session numbers more than a thousand. The University of Minnesota assumes that the students planning to attend its classes expect to become acquainted with, and study under, the regular faculty; therefore, many of the University's most outstanding scholars will be present to teach and to direct research. Visiting professors who are eminent in their fields will be invited for the Summer Session.

COURSES OF STUDY

More than 1,000 subjects of study will be offered during the two terms of the 1948 Summer Session. We have provided a comprehensive and diversified curriculum which will be of value to the summer

student in understanding the problems of world reconstruction. Your particular attention is directed to our courses in the Scandinavian Area and American Studies. Teachers in particular may find in these programs an orientation which will contribute effectively to their classroom teaching.

LIBRARIES

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

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

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

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

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

HOUSING AND FOOD SERVICE

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

Reservations should be made as far in advance as possible. Applications should be sent directly to Ada Comstock Hall. All applications for Summer Session residence will be filed in order of the date received. No application will be recorded until a completed lease is filed. This lease will hold the room until the Monday before Summer Session classes begin. A \$5 deposit will be required at the time a definite room assignment is made. Refund of this deposit will be made only if cancellation is received before June 1. For additional information, write the Director of Comstock Hall, University of Minnesota, Minneapolis 14, Minnesota.

Sanford Hall—Sanford Hall will be open for the first term of the Summer Session if there is a demand.

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

The rates during the summer are as follows: single rooms, \$25 per term; other rooms, \$20 per term per occupant.

Applications for rooms, accompanied by a \$2 deposit, should be made to the Office of the Superintendent, School of Agriculture, St. Paul Campus, St. Paul 1, Minnesota.

Assignment of rooms in Meredith Hall will be made at the time of registration. Payment for the first term of the Summer Session must be made to the cashier at the beginning of the first week. The dormitory will be open Monday, June 14. Rooms will not be available during the second term.

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

Pioneer Hall—This residence hall for men is accepting applications for the Summer Session of 1948. Priority will be given applicants who are veterans of World War II. Double-deck beds are used in order to accommodate as many students as possible. Three meals a day are included in the board and room contract. For additional information, write directly to Pioneer Hall, University of Minnesota, Minneapolis 14, Minnesota.

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

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

Units are now leased on a twelve-month basis, with the possibility of some of them being sublet for the Summer Session. Graduate students interested in residence at University Village should com-



Pioneer Hall

municate with the Director of Men's Residences, Room 3, Administration Building, University of Minnesota, Minneapolis 14, Minnesota, regarding application, prices, and other details.

Requirements for residence in University Village:

1. Student must carry a normal load in the Graduate School.
2. United States veterans with children will be given first priority.

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

Private Residences—Most men and women entering the University will live in rooming houses and private homes. A considerable number of rooms are usually available. Since householders list all vacancies with the Student Housing Bureau, Room 204, Eddy Hall, students should contact this agency to secure such accommodations. These facilities are university inspected and approved.

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

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

STUDENTS' HEALTH SERVICE

The Students' Health Service conducts a health program during the Summer Session on the same basis as any other quarter of the



Coffman Union Fountain Grille

year. A dispensary and hospital are maintained exclusively for students. The same staff of physicians, dentists, and nurses is on duty as during the rest of the year. The students' hospital provides hospitalization for students whenever necessary. Home calls are made in case of emergency.

SUMMER RECREATION

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

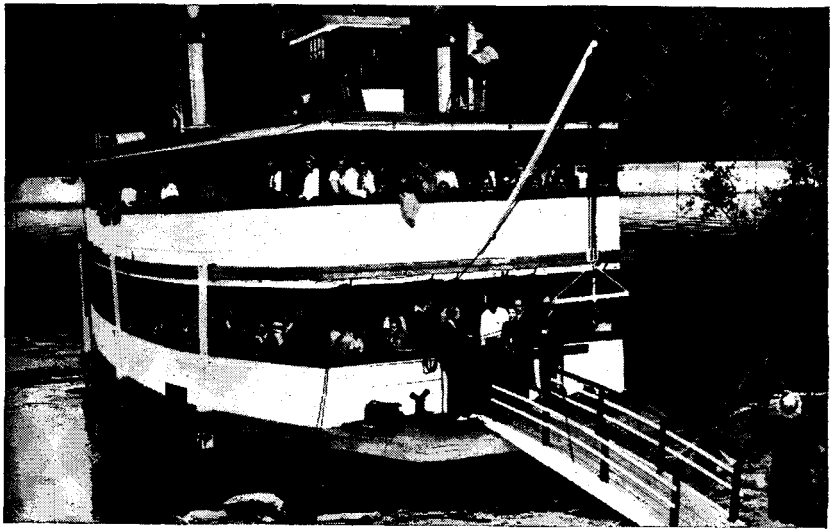
Included in the recreation program are regularly arranged weekly social dances and instruction periods in social dancing, square dancing, contract bridge, and bowling. Musical features include music listening hours and a music lending library.

Numerous excursions to points of historical, industrial, educational, or purely recreational interest in the vicinity of the Twin Cities also are made each summer. The only cost of these tours is the necessary fare for transportation.

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

A program of tennis and golf tournaments as well as other competitive sports is arranged each summer. A daily sports hour is arranged at the Norris Gymnasium for Women for the enjoyment of women students; activities such as aerial darts, badminton, and table tennis will be available. In addition, the swimming pools with attendants and instructors in charge are available at scheduled times for men in Cooke Hall, for women in Norris Gymnasium; and in the Farm Gymnasium all these facilities are available for both men and women. Most of these activities have no extra charge except for towel service.

Tennis and golf tickets—Tennis tickets will be issued to regularly enrolled students of the Summer Session upon payment of a small fee and presentation of the bursar's receipt for fees. Without tickets, a slightly larger charge per session of play is made for the use of the tennis courts. Golf tickets are issued in the same manner without charge, but a greens fee is charged. Application should be made at the golf course clubhouse.



Donna Mae Boat Trip

SPECIAL FEATURES

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

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

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

COFFMAN MEMORIAL UNION

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

Recreation facilities—Popular with men and women students are the sixteen bowling lanes, the modern billiard room, and a coeducational game room for recreation; the large cafeteria and interesting fountain grille for dining; the men's, women's and coeducational lounges for resting and studying; the spacious open terrace for lounging or dining; the Terrace Reading Room for recreational reading; the University Post Office and the neighboring Union Bookstore; and barber and beauty shops for convenient utilitarian services.

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

The Union Art Craft Workshop—The Coffman Memorial Union features informal recreational opportunities for developing new



Scene from University Theatre Production

skills in the arts and crafts in the workshop where instruction and material are available. Tools and materials for oil and water color painting, ceramics, metal, leather, wood, and all other crafts are available without formal registration or fees.

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

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

ST. PAUL CAMPUS UNION

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

THE MUSEUM OF NATURAL HISTORY

The Minnesota Museum of Natural History is the modern, ivy-covered limestone building located at 17th and University avenues. Its exhibition corridors house a refreshing series of lifelike exhibits of the animal and plant life selected from the various corners of Minnesota. These are open to the public from 9 to 5 daily and from 2 to 5 on Saturdays, Sundays, and holidays during both summer

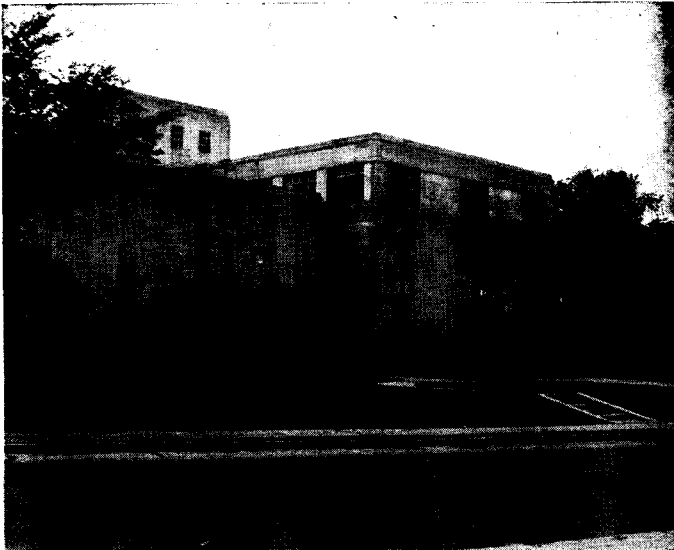
terms. In addition to the public exhibits, extensive scientific series of birds, mammals, and other natural history materials are housed here for those interested in more careful study in these fields. The Museum's attractive auditorium is widely used by many campus departments.

CENTER FOR CONTINUATION STUDY

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

THE UNIVERSITY GALLERY

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



Museum of Natural History

ADMISSION AND REGISTRATION

ADMISSION

The courses of the Summer Session are open to all qualified high school graduates, persons now regularly admitted to the University including those attending regular session, and persons with previous college work. Students with previous college work who wish to attend for the Summer Session only and who are not candidates for degrees during the Summer Session may do so without filing credentials, provided the applicants are in good standing. Such students will be classified as special students for the Summer Session only. Special students who wish to be considered for admission to a subsequent term must file regular admission applications early in the summer.

Any student who expects to become a candidate for a degree at the University during either summer term must file, with the Office of Admissions and Records, an application for admission and an official transcript of credits covering high school and previous college work. This in no way sets aside the general university regulations specifying the residency requirements for degrees.

Students who have had no previous college work must satisfy admission requirements for the college desired. Exceptions may be granted in certain cases for persons of maturity (generally over twenty-four years of age) whose preparation does not meet the requirements of Summer Session. They may attend as adult special students, subject to the approval of the dean of the college or school concerned or the dean of the Summer Session. Non-high school graduates and others who do not meet normal requirements may be considered by examination.

Attendance during the Summer Session in no way admits to the regular academic year nor does it establish any claim to consideration of undergraduates for admission to any college of the University during any subsequent term in the regular academic year, except in certain cases of readmission. Admission or readmission in the regular academic year is subject to the current nonresidency restrictions which are not effective in Summer Session.

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

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

NONRESIDENT REGULATIONS FOR THE ACADEMIC YEAR*

ADMISSION

By action of the Board of Regents, taken because of the present educational emergency, admission of nonresidents to the regular session is restricted. Rules in effect at the date of this publication make exceptions for veterans whose homes are in a defined area (Wisconsin, northern Michigan, Iowa, North Dakota, South Dakota, and Montana) economically and educationally related to Minnesota and who are in the upper 25 per cent of their high school graduating classes, or who have an average of "B" or better if they are applying for admission with advanced standing.

Nonveterans in the same area, to be considered, must be in the upper 10 per cent of their graduating class or present a "B" average if applying for admission with advanced standing. Sons and daughters of former students are also eligible for consideration. Other minor exceptions have been established covering a few individual circumstances.

READMISSION

Nonresidents whose educational programs have been interrupted and who formerly attended here as regular students are eligible for readmission in the academic year as regular students only if they had "C" averages during their previous university attendance. Nonresidents whose previous records at Minnesota were below "C" may not re-enter as regular students.

REGISTRATION

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

The regular registration days are:

For the first term	Monday, June 14, 8:00 a.m. to 4:00 p.m.
	Tuesday, June 15, 8:00 a.m. to 4:00 p.m.
For the second term	Monday, July 26, 8:00 a.m. to 4:00 p.m.

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

Wednesday, June 16	\$2.00
Thursday, June 17	3.00
Friday, June 18	4.00
Monday, June 21	5.00

No registrations are allowed for the first term after Monday, June 21, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

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

Tuesday, July 27	\$2.00
Wednesday, July 28	3.00
Thursday, July 29	4.00
Friday, July 30	5.00

* Not applicable to Summer Session.

No registrations will be accepted for the second term later than Friday, July 30, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

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

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

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

CHANGES IN REGISTRATION

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

FEES

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

Tuition fee (per term)	\$30.00
Incidental fee‡ (per term)	6.00
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Total fee (per term)	\$36.00
General deposit	\$ 2.00

Forestry fees:

Dormitory and dining hall at Itasca Forest and Biological Station (first term)	\$ 5.00
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The following fees are payable each term at the time of registration by each student taking four credits or less and must be paid before registration is complete:

Part-time tuition fee (4 credits or less) (per term)	\$20.00
Incidental fee‡ (per term)	6.00
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Total fee (per term)	\$26.00
General deposit	\$ 2.00

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

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

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

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

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

AUDITORS

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

CREDIT

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

AMOUNT OF WORK

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

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

GRADUATE SCHOOL

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

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

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

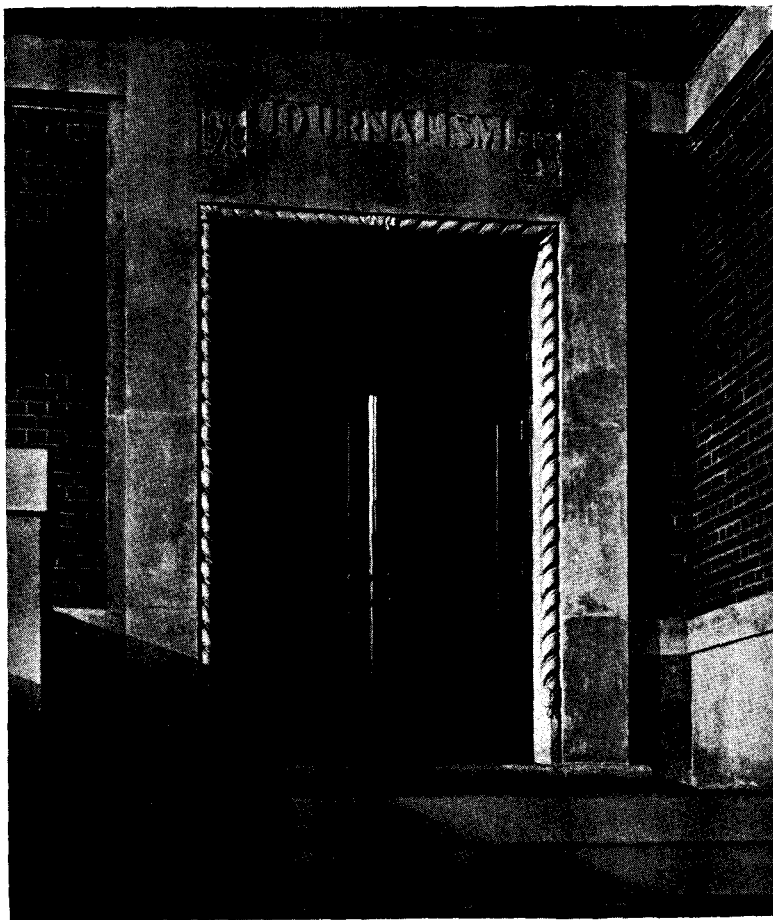
Students not yet admitted to the Graduate School are requested to make application for admission *at least four weeks* before the opening of the term that they expect to attend, in order to avoid delay, last-minute disappointment, and possible penalty for late registration. All applications for admission,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



River Flats

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

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



Murphy Hall

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

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

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

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

DEPARTMENT OF ART

A forward step in the development of creative arts at the University of Minnesota has been achieved through the formation of the new Department of Art in the College of Science, Literature, and the Arts. In this department have been integrated courses in art history formerly given in the Department of Fine Arts, and studio courses formerly given in the Department of Art Education, the School of Architecture, and the School of Engineering.

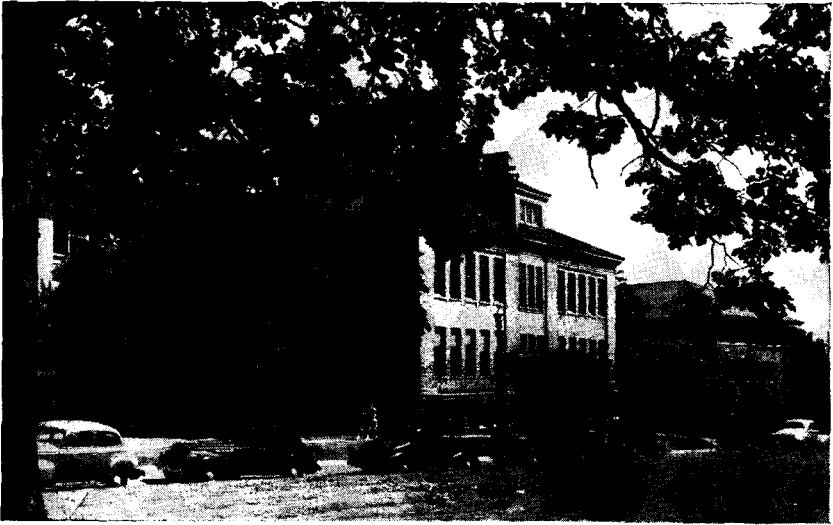
American painters will be available for courses in oil and water color painting, and for individual criticism and advice to advanced students. Extended offerings will include studio practice in crafts, ceramics, and sculpture. Basic design and painting courses for elementary and secondary school teachers, architects, and others will continue to be offered this summer in the new department.

Introductory courses in art appreciation and history of art will also be given. These aim to provide a general cultural and historical background for both professional students and teachers of art as well as those interested in history and the humanities. Specialized studies in American, Greek, Gothic, and Renaissance art are available to students of more advanced standing.

Professional training in the arts is available in the College of Science, Literature, and the Arts through the Department of Art. These programs include professional studio work, industrial art, as well as graduate work and historical and creative research.

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

Further information on these curricula may be had by writing directly to the Dean of the Summer Session or the Department of Art, University of Minnesota, Minneapolis 14, Minnesota.



Buildings on St. Paul Campus

DEPARTMENT OF MUSIC

The Budapest String Quartet will be on the campus for at least three weeks during the first term of the Summer Session will give six string quartet concerts, will teach privately, and will give a special course in string ensemble or chamber music.

Regular courses, graduate and undergraduate, will be offered in all branches of Music and Music Education during the summer terms of 1948.

Resident staff members, including artist teachers from the Minneapolis Symphony Orchestra, will be available for instruction in piano, organ, voice, violin, and all other instruments of the orchestra and band.

Applied music, music appreciation, music history, and music theory may be studied by students interested in obtaining a broad general education as well as students preparing to become professional musicians and teachers of music. Nationally-known musicians will teach courses in American music, music theory, orchestration, and composition.

In addition to the regular music education courses, special workshops in band and general music education will be offered to students interested in the music education field. Plans are under way to conduct a band clinic during the summer months.

Students are offered the opportunity of hearing much music literature because of the great musical activity in the way of concerts and recitals on the campus and in the Twin City area.

INSTITUTE OF SPANISH-AMERICAN STUDIES

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

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

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

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

The Institute will serve to give the teachers of Spanish an increased skill in teaching by analyzing (a) the problems and methods connected with it and (b) the different aids (games, films, phonograph records, publications, etc.) that are used to enliven the dull monotony of rules and sequences and the necessary rigidity of grammar.

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

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

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

All the activities of the Institute will be centered in a Spanish House conveniently located. Spanish will be spoken exclusively under the guidance of native teachers, not only in the organized groups but also during meals and at all informal gatherings. In addition to the regular classes, there will be programs of various sorts in Spanish, such as lectures, movies, games, songs, etc. All

students registered in the Institute will be required to live at the Spanish House. However, students living in the Twin Cities will not be required to rent rooms in the house, but they will be required to take their meals there and to remain at the house until the activities of the day are over.

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

INSTITUTE OF TECHNOLOGY

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

Included in the curriculum of the College of Engineering and Architecture will be courses in architecture; aeronautical, civil, electrical, and mechanical engineering; drawing and descriptive geometry; and mathematics and mechanics. In the School of Chemistry, inorganic chemistry, analytical chemistry, organic chemistry, physical chemistry, and chemical engineering will be offered again this summer. Sufficient graduate courses in chemistry are now offered in the Summer Session so that students may acquire a Master's degree in this field by attending in the summer only. Students entering the Institute of Technology with a deficiency in higher algebra (Mathematics and Mechanics 9) or solid geometry (Drawing 10) have an opportunity to remove this deficiency during the Summer Session preceding their entrance into the University in the fall.

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

The College of Agriculture, Forestry, and Home Economics offers a limited number of courses during the Summer Session period to college undergraduates interested in these fields. A large number of courses from most of the agricultural divisions are offered for graduate students. For high school teachers of agriculture there are op-

portunities for advanced courses in many of the agricultural fields which are supplementary to the courses offered by the Department of Agricultural Education (see College of Education, page 64). For courses offered at the Biological Station at Lake Itasca, see below.

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

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

BIOLOGICAL STATION OF THE UNIVERSITY OF MINNESOTA

The Biological Station at Itasca Park will offer an extensive curriculum in the several fields of biology during the second term of the Summer Session which begins on July 26, 1948. This attractive station is well equipped with the necessary laboratories for instruction and adequate living accommodations for students. The courses offered conform to the usual university standards at both the undergraduate and graduate levels. There are unusual opportunities for independent graduate work. Students desiring graduate credit must consult the Graduate School concerning admission and registration.

Courses in botany, wildlife, vertebrate zoology, entomology, mycology, parasitology, and limnology will be offered. The enrolment is limited to sixty men students and forty women students. More detailed information will be furnished in a special bulletin which will be issued in the winter quarter. All inquiries concerning the Biological Station should be addressed to the College Office, St. Paul Campus, St. Paul 1, Minnesota. Application for registration should be filed with that office not later than July 15, 1948. Early registration is recommended.

MEDICAL SCHOOL

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

Attendance during the summer of 1948 will not be required for students who are now registered in the Medical School, but certain courses from the regular curriculum will be offered. For a list of these courses see individual department schedules in the *Summer Session Bulletin*.

The clinical departments of medicine, surgery, obstetrics and pediatrics will offer elective externships at the University Hospitals. Approximately three-fourths of a student's time will be devoted to these externships, leaving one-fourth of the time for a minor course in a basic science or in another clinical department. These externships are open to physicians and to qualified medical students from other institutions who are recommended by their respective deans. Junior and senior medical students in the University of Minnesota Medical School are invited to register for externships of their selection on a voluntary basis.

Elective courses in both preclinical and clinical departments will be offered (see departmental schedules). Graduate physicians, medical students at the University of Minnesota and Summer Session students from other medical schools may register for these courses up to the capacity of each course.



Air View of Medical Group, Minneapolis Campus

Inquiries concerning elective courses, courses from the required medical curriculum and clinical externships may be addressed to the Assistant Dean, University of Minnesota Medical School. Registration for students from other medical schools will be on June 15. Students who wish to earn graduate credit must register through the Graduate School Office, University of Minnesota. Final approval of registration in any course in Medical School must be obtained from the Medical School Office.

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

SCHOOL OF NURSING

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

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

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

SCHOOL OF PUBLIC HEALTH

During the 1948 Summer Session, the School of Public Health will offer a broad program of study for professional personnel at both the undergraduate and graduate levels, extending through the two terms of the Summer Session.

Courses will be available for public health engineers, public health nurses, health educators, or other personnel who are studying toward a special professional degree in public health. Public health nurses engaged in, or preparing for, supervisory work, as well as those who are seeking introduction to the field, will find courses to meet their needs. The basic courses for public health nurses again will be divided between the two summer terms, but those who have had less than six months public health nursing experience should plan to attend both terms of the Summer Session.

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

Two workshops in public health nursing are planned during the first term. During the first three weeks a cancer workshop will be held with the cooperation of the United States Public Health Service. A workshop in public health nursing administration is planned for the second three weeks of the first term. Registration for both workshops will be limited.

MEDICAL TECHNOLOGY

The required four-year curriculum in Medical Technology leads to the degree of bachelor of science.

Several of the required courses in this curriculum are given during the Summer Session. (See special bulletin on Medical Technology.) Before registering in Summer Session, students should consult advisers in the Medical Technology office, 519-M, University Hospitals.

OCCUPATIONAL THERAPY

The course in Occupational Therapy is a four-year and one-quarter course given in the College of Science, Literature, and the Arts and in the Medical School. The degree of bachelor of science in occupational therapy is awarded upon completion of prescribed curriculum. For further information write to the Occupational Therapy Office, 3302 Powell Hall, University of Minnesota, Minneapolis 14, Minnesota, or telephone MAin 8551, extension 347.

PHYSICAL THERAPY

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

SCHOOL OF DENTISTRY

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

COLLEGE OF PHARMACY

Students in the College of Pharmacy may register for one or both terms of the Summer Session in nonprofessional (nonpharmaceutical) courses. A student registering as a freshman at the beginning of the winter quarter of the regular school year may complete qualitative inorganic chemical analysis, English composition, and the botany sequence if nonconflicting hours can be arranged. Upper classmen may register for offerings made in any other college. No courses in pharmacy, pharmaceutical chemistry, or pharmacognosy will be offered during the Summer Session of 1948.

COLLEGE OF EDUCATION

The College of Education offers an extensive Summer Session program at the undergraduate and graduate levels. Regular staff members and outstanding visiting lecturers will be available for offerings in school administration, philosophy of education, curriculum, educational psychology, personnel work, teacher education, and other educational fields. Special attention has been given to arrangements for advisory work with both graduate and undergraduate students.

Workshops for the study of current problems in American education will be scheduled for both terms. In the first summer term, two workshops on curriculum problems of the elementary and secondary schools will be offered, as well as a workshop on problems of higher education. The Department of Music Education also has planned a workshop for the first term, emphasizing general problems in that field. The rural education workshop, open to rural teachers and administrators, will be scheduled for the second term. Anyone interested in applying for admission to a workshop should address the Office of the Dean, College of Education, University of Minnesota, Minneapolis 14, Minnesota.

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



Burton Hall

Students wishing to plan summer programs early may find assistance through the College of Education office. Graduate students planning to work toward the M.A. and Ph.D. degrees with a major in education should follow the procedure outlined by the Graduate School for admission and program planning.

PHYSICAL EDUCATION FOR MEN

PROFESSIONAL PROGRAM FOR TEACHERS

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

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

See the Program of Courses, page 70, for specific course offerings.

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

PHYSICAL EDUCATION FOR WOMEN

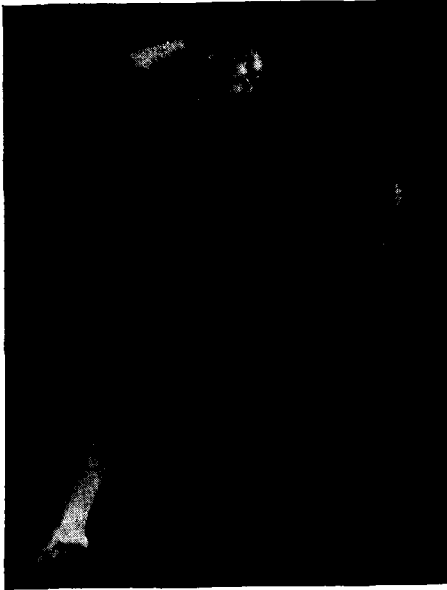
PROFESSIONAL PROGRAMS FOR TEACHERS

1. **The master of education program**—This is a five-year curriculum, or 45 credits in courses numbered over 100 in addition to the equivalent of a four-year major. The program for the master of education degree is set up for each individual in terms of background and professional interests. See, especially, courses 112, 114, 118, and courses numbered over 100 in the Department of Physical Education for Men.

2. **The four-year major in physical education**—A number of courses required in the undergraduate major leading to the bachelor of science in education are available for the summer of 1948. See courses 21, 25, 41, 61, 65, 83, 84.

3. **The undergraduate minor in physical education**—Several courses required in the undergraduate minor are available for the summer of 1948. Those who have met the requirements for the nine-quarter-hour endorsement have thereby met 9 of the 26 credits required for the minor in this field. See especially, courses 21, 32, 33, 37, 41, 61, 65, 84, 90.

4. **The nine-quarter-hour endorsement**—Required by the State Department of Education for those who wish to teach physical education part time in Minnesota. It is possible to meet this endorsement entirely in the first summer term. See, especially, courses 12, 13, 21, 37, 41, 61, 65, 84.



Modern Dance

Questions concerning any of the above offerings should be addressed to the Department of Physical Education for Women, University of Minnesota, Minneapolis 14, Minnesota.

SCHOOL OF BUSINESS ADMINISTRATION

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

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

5. **Minor in school health education**—Several courses required for this minor are available for the summer of 1948. See courses 83, 90, 114.

TEACHING DEMONSTRATION

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

COLLEGE PHYSICAL EDUCATION REQUIREMENT

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



Children in the Nursery School

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

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

INSTITUTE OF CHILD WELFARE

The summer courses offered by the Institute of Child Welfare are designed to train workers in the fields of child development, early childhood education, and parent education.

There is a continually increased need for workers in all areas dealing with the care and training of young children. The summer program offered by the Institute of Child Welfare is planned for both undergraduate and graduate students and to meet the need of experienced persons who wish to add to their knowledge of theory and practice in working with young children.

The Nursery School and Kindergarten will be in session during the first term to provide opportunities for observation, directed teaching, and research.

Courses are listed under the Institute of Child Welfare in later sections of the bulletin and also under the College of Education classification, "Methods and Directed Teaching."

Undergraduate courses include those required in the Nursery School-Kindergarten-Primary teacher-training program, and both beginning and advanced courses in child training, child psychology, child development, and parent education which are elected by students in various departments of the University.

Graduate courses include those necessary to meet the requirements for the Master's degree under either Plan A or Plan B. Graduate courses in Child Welfare may be taken as major or minor subjects, or as electives chosen by graduate students majoring in other related areas.

LIBRARY INSTRUCTION

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

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

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

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

Forty-five quarter credits constitute a major in the Division of Library Instruction, all of which must be taken in residence. A student becomes eligible for either a bachelor of science degree or a degree of bachelor of science in library science at the completion of these 45 credits, under the conditions set forth in the Announcement for the Years 1947-49 of the Division of Library Instruction, published August 26, 1947.

THE GENERAL COLLEGE

The General College offers a two-year program in higher education leading to the degree of associate in arts. Admission to the college requires graduation from an accredited high school or the passing of university entrance tests, but no specific pattern of high



Itasca Biological Station

school subjects is required. Students who, because of inadequate preparation or poor high school record, do not qualify for admission to other colleges of the University may remedy these deficiencies or demonstrate their ability to handle work of college caliber through a careful selection of courses in the General College.

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

A TRAINING PROGRAM IN VOCATIONAL DIAGNOSIS AND COUNSELING

A Master's degree, under either Plan A or Plan B, may be taken by students who desire training in vocational diagnosis and counseling, with a major in psychology or educational psychology. Training in these departments may be combined with related courses

in other departments, e.g., personnel work or industrial relations in the School of Business Administration or in Public Administration, case work in the School of Social Work, etc.

No one course of training is going to prepare adequately a counselor to meet the many types of counseling jobs that are open. Therefore, the Counseling Program at the University of Minnesota has been set up with "flexibility" as the keynote of the curriculum. The plan is to "tailor make" the course of study for each student who enters this program. The particular course of study to be followed will be worked out by the student and his adviser, with the student's needs and future plans being the point of reference.



Campus Scene

Program

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

EXPLANATION OF COURSE NUMBERS

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

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

ANTHROPOLOGY

FIRST TERM

40su	Introduction to Anthropology	Harold P. Winchester
80su	The American Indian	Mr. Essene
123su	Problems in Anthropology	Mr. Essene
169su	Peoples of the South Seas	Mr. Essene

SECOND TERM

41su	Introduction to Anthropology	Ar.
119su	Contact of Cultures	Ar.

ART

FIRST TERM

FA 1su	Introduction to Modern Art	Mr. Arnason
FA 109su	Art in America	Ar.
FA 142su	The Art of Greece and Rome	Ar.
AE 1su	General Design	Mr. Torbert
AE 24A,-		
B,Csu	Water Color Painting	Mr. Quirt
AE 28A,-		
B,Csu	Oil Painting	Mr. Quirt
AE 33su	General Handcrafts	Miss Page
AE 51su	Introduction to Industrial Design	Mr. Torbert
AE 61su	Figure Drawing and Painting	Mr. Quirt
AE 63su	Landscape Drawing and Painting	Mr. Quirt
AE 70A,-		
B,Csu	Sculpture	Mr. Lupori
AE 73su	Ceramics	Mr. Lupori
AE 124su	Advanced Specialized Drawing and Painting	Mr. Quirt
AE 170su	Advanced Sculpture	Mr. Lupori
AE 173su	Advanced Ceramics	Mr. Lupori
DP 1su	Drawing and Painting, Grade I	Mr. Sabean
DP 1IIsu	Drawing and Painting, Grade II	Mr. Sabean
DP 1IIIsu	Drawing and Painting, Grade III	Mr. Booth
DP 1IVsu	Drawing and Painting, Grade IV	Mr. Booth
DP 1Vsu	Drawing and Painting, Grade V	Mr. Booth
41-42-		
43su	Technical Drawing	Mr. Doseff
81-82-		
83su	Advanced Drawing	Mr. Doseff
86-87su	Anatomical Drawing	Mr. Doseff

SECOND TERM

FA 3su	Introduction to Renaissance and Baroque Art	Ar.
FA 155su	Great Masters of the High Renaissance	Ar.
AE 2su	General Design	Mr. Torbert
AE 32Asu	Interior Design	Mr. Torbert
AE 34su	General Handcrafts	Miss Page
DP Isu	Drawing and Painting, Grade I	Mr. Sabean
DP IIsu	Drawing and Painting, Grade II	Mr. Sabean
DP IIIsu	Drawing and Painting, Grade III	Mr. Morris
DP IVsu	Drawing and Painting, Grade IV	Mr. Morris
DP Vsu	Drawing and Painting, Grade V	Mr. Morris
M-I,II,-		
IIIsu	Modelling Grade I, II, III	Mr. Sabean
41-42-		
43su	Technical Drawing	Mr. Doseff
81-82-		
83su	Advanced Drawing	Mr. Doseff
86-87su	Anatomical Drawing	Mr. Doseff

ASTRONOMY

FIRST TERM

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

SECOND TERM

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

BOTANY

FIRST TERM

4su	General Botany	Mr. Banks
51su	General Plant Physiology	Mr. Brown
140su	Advanced Survey of Plant Physiology	Mr. Brown
197su	Problems	Staff

SECOND TERM

5su	General Botany	Mr. Banks
198su	Problems	Staff

For other course offerings during the Second Term, see *Bulletin of Biological Station Summer Session at Lake Itasca.*

CLASSICS

FIRST TERM

Greek

171su	Independent Reading	Mr. Swanson
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Latin

171su	Independent Reading	Mr. Swanson
221su	Seminar: Lyric Poetry	Mr. Heller

Classics

42-43su	Greek Mythology	Mr. Heller
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SECOND TERM

Greek

172su	Independent Reading	Mr. Walton
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Latin

172su	Independent Reading	Mr. Walton
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Classics

24su	Greek and Latin Elements in English	Mr. Swanson
31-32su	Greek and Roman Drama	Mr. Walton

COMMUNICATIONS

See General Studies, page 37.

ECONOMICS

For courses in Economics, see School of Business Administration offerings listed on page 71.

ENGLISH

FIRST TERM

Courses in Literature

22su	Introduction to Literature	Mr. Hessler
38su	Twentieth-Century Literature	Mr. Hulme
55su	Shakespeare (Comedies)	Mr. Buckley, Miss Christie
56su	Shakespeare (Histories-Tragedies)	Miss Christie
62su	Milton	Mr. Dunn
74su	American Literature	Mr. Smith
75su	Chaucer	Mr. Clark
100su	Old English	Mr. Clark
110su	Byron, Shelley, Keats, etc.	Ar.
113su	The American Short Story	Miss Turpie
120su	Interpretation of Poetry	Mr. Unger
165su	Historical Study of Modern English	Mr. Allen
174su	American English	Mr. Allen
183su	The Poetry of T. S. Eliot	Mr. Unger
197su	Seventeenth-Century Literature	Mr. Dunn
265su	Seminar in American Romanticism	Mr. Smith
2xxsu	Seminar in English Literature	Ar.

Courses in Composition

	*Preparatory Composition	Ar.
4su	Freshman Composition	Ar.
5su	Freshman Composition	Ar.
6su	Freshman Composition	Ar.
27su	Advanced Writing (Exposition)	Mr. Buckley, Mr. Hulme
28su	Advanced Writing (Description and Narration)	Mr. Bellow
102su	Seminar in Writing	Mr. Bellow

SECOND TERM

Courses in Literature

39su	Twentieth-Century Literature	Mr. Cronin
55su	Shakespeare (Comedies)	Ar.
56su	Shakespeare (Histories and Tragedies)	Ar.
73su	American Literature	Mr. McDowell
106su	Eighteenth-Century Poetry	Mr. Hillhouse
118su	Nineteenth-Century Prose	Mr. Mineka
129su	Modern Drama	Mr. Mineka
156su	American Drama	Mr. Hornberger

Courses in Composition

	*Preparatory Composition	Ar.
4su	Freshman Composition	Ar.
5su	Freshman Composition	Ar.
6su	Freshman Composition	Ar.
27su	Advanced Writing (Exposition)	Ar.
28su	Advanced Writing (Description and Narration)	Mrs. Phelan, Ar.
103su	Seminar in Writing	Mrs. Phelan

* This course is offered through the Extension Division and a special fee must be paid to the Extension Division.

ENGLISH FOR THE INSTITUTE OF TECHNOLOGY

SUMMER QUARTER

4su	Written and Spoken Communication	Mr. Guthrie
5su	Written and Spoken Communication	Ar.
6su	Written and Spoken Communication	Ar.
9su	Technical Discussions	Mr. Guthrie

FAMILY LIFE

See General Studies, below.

GENERAL STUDIES

FIRST TERM

Communication

1su	Communication	Miss Anderson, Mr. Wilhelm
2su	Communication	Mr. Bryan
3su	Communication	Mr. Ames

Family Life

1su	Preparation for Marriage	Mrs. Dyer, Mrs. Aldrich, and others
14su	Nutrition and Food Management	Mrs. MacKenzie
15su	The Home and Its Furnishing	Miss Myren
25su	Child Development	Ar.

Foreign Study

161su	Seminar for Foreign Study I	Ar.
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Humanities

1su	Humanities in the Modern World I	Mr. Castell
2su	Humanities in the Modern World II	Mr. Swanson
3su	Humanities in the Modern World III	Mr. Bryan
4su	Humanities in the Modern World IV	Mr. Ames, Miss Shaw
12su	The Roman and the Medieval Heritage	Ar.
21su	American Life	Miss Turpie
131su	Humanities Proseminar	Mr. Castell

Natural Science

1su	Orientation in the Natural Sciences I	Mr. Graubard
72su	The Development of the Sciences	Mr. Graubard

Personal Orientation

1su	How To Study	Mr. Herbert
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Social Science

1su	Introduction to Social Science	Mr. Naftalin
2su	Introduction to Social Science	Mr. Naftalin

SECOND TERM

Communication

2su	Communication	Mr. Livingston
3su	Communication	Mr. Harkness

Family Life

1su	Preparation for Marriage	Mrs. Dyer and others
25su	Child Development and Adjustment	Ar.

Foreign Study

162su	Seminar for Foreign Study II	Ar.
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Humanities

2su	Humanities in the Modern World II	Mr. Livingston
3su	Humanities in the Modern World III	Mr. Swanson
4su	Humanities in the Modern World IV	Mr. Cronin, Mr. Bryan
22su	American Life	Ar.

Natural Science

2su	Orientation in the Natural Sciences II	Mr. Graubard
73su	The Development of the Sciences	Mr. Graubard

Personal Orientation

1su	How To Study	Mr. Herbert
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Social Science

2su	Introduction to Social Science	Mr. Naftalin
3su	Introduction to Social Science	Mr. Naftalin

GEOGRAPHY

FIRST TERM

38su	General Geography (General College)	Mr. Jennings
41su	Geography of Commercial Production	Mr. Burgy
43su	Political Geography	Mr. Kuchler
71su	Geography of North America	Mr. Weaver
101su	Geography of Europe	Mr. Kuchler
125su	Geography of Polar Regions	Mr. Weaver

SECOND TERM

11su	Human Geography	Mr. Kuchler
53su	Historical Geography of North America	Mr. Brown
110su	Geography of South America	Mr. Brown

GEOLOGY AND MINERALOGY

FIRST TERM

1su	General Geology	Mr. Thiel
150su	Field Geology (Black Hills).....	Mr. Schwartz
170su	Geologic Problems	Mr. Thiel

SECOND TERM

2su	Historical Geology	Mr. Swain
100su	Field Work (Northern Minnesota).....	Mr. Gruner
170su	Geologic Problems	Mr. Swain

GERMAN

FIRST TERM

1su	Beginning A	Mr. Prottengeier
2su	Beginning B	Ar.
3su	Beginning C	Mr. Menze
4su	Intermediate	Mr. Pfeiffer
77su	Faust I	Mr. Downs
130su	Hans Sachs	Mr. Downs
160su	Heinrich Heine	Mr. Pfeiffer

SECOND TERM

2su	Beginning B	Miss Wangsness
3su	Beginning C	Mr. Uhle
4su	Intermediate	Mr. Ramras

HISTORY

FIRST TERM

1su	Civilization of the Modern World, Part I	Miss Helmes
2su	Civilization of the Modern World, Part II	Miss Helmes
5su	English History: Tudors and Stuarts	Ar.

20su	American History: Colonial and Early National Period	Mr. Twyman
21su	American History: Sectionalism and National Development	Mr. Twyman
50su	Greek History	Mr. Jones
54asu	Renaissance and Reformation, Part II	Miss Thompson
58asu	Russia: From Alexander II to the Present	Mr. Anderson
58bsu	History of the Middle East: From 1801 to the Present	Mr. Anderson
62su	European Overseas Expansion to 1600	Mr. Willson
72su	English Constitutional History: In the Last Two Centuries	Miss Thompson
75su	Modern England, Nineteenth and Twentieth Centuries	Mr. Willson
90su	American History: The Colonial Frontier	Mr. Osgood
93asu	Latin-American History, Part I	Mr. Beatty
94su	American Diplomatic History, Part II	Mr. Beatty
101su	Greek History (for students seeking graduate credit in 50su)	Mr. Jones
105su	Renaissance and Reformation (for students seeking graduate credit in 54asu)	Miss Thompson
107su	European Overseas Expansion (for students seeking graduate credit in 62su)	Mr. Willson
109asu	Russia (for students seeking graduate credit in 58asu)	Mr. Anderson
109bsu	History of the Middle East (for students seeking graduate credit in 58bsu)	Mr. Anderson
112su	English Constitutional History (for students seeking graduate credit in 72su)	Miss Thompson
112asu	Modern England (for students seeking graduate credit in 75su)	Mr. Willson
122su	American History (for students seeking graduate credit in 90su)	Mr. Osgood
126su	American Diplomatic History (for students seeking graduate credit in 94su)	Mr. Beatty
136asu	Latin-American History (for students seeking graduate credit in 93asu)	Mr. Beatty
190su	Selected Readings in History of the West, Colonial Period	Mr. Osgood

SECOND TERM

3su	Civilization of the Modern World, Part III	Mr. Lindgren
22su	American History, Part III	Mr. Wyman
55asu	Renaissance and Reformation, Part III	Mr. Krey
56su	Modern Scandinavian History	Mr. Lindgren
67su	Europe in the Twentieth Century, Part III	Mr. Deutsch
87su	American Colonies, Part II	Mrs. Tyler
87asu	Social and Intellectual History of the U. S., Part II	Mrs. Tyler
91su	American History, Part II	Mr. Wyman
106asu	Renaissance and Reformation (for students seeking graduate credit in 55asu)	Mr. Krey
107csu	Modern Scandinavian History (for students seeking graduate credit in 56csu)	Mr. Lindgren
109su	Europe in the Twentieth Century (for students seeking graduate credit in 67su)	Mr. Deutsch
123su	American History, Part II (for students seeking graduate credit in 91su)	Mr. Wyman
132su	American Colonies (for students seeking graduate credit in 87su)	Mrs. Tyler
132asu	Social and Intellectual History of the U. S. (for students seeking graduate credit in 87asu)	Mrs. Tyler
224su	Seminar in Modern European History	Mr. Deutsch

HOW TO STUDY

See General Studies, Personal Orientation, page 37.

HUMANITIES

See General Studies, page 37.

JAPANESE

See Linguistics and Comparative Philology, below.

JOURNALISM

FIRST TERM

11su	Introduction to Reporting (for minors)	
	Section 1	Mr. Ford
	Section 2	Mr. Hiebert
13su	Introduction to Reporting	
	Section 1	Mr. Janson
	Section 2	Mr. Patterson
15su	Newspaper Reporting	
	Section 1	Mr. Hovey
	Section 2	Mr. Patterson
51su	News Editing	
	Lectures	Mr. Janson
	Section 1	Mr. Janson
	Section 2	Mr. Janson
	Section 3	Ar.
55su	Advertising and Newspaper Typography	
	Lectures	Mr. Barnhart
	Section 1	Mr. Barnhart
	Section 2	Mr. Barnhart
67su	Radio News Writing	
	Lectures	Mr. Charnley
	Laboratories	Mr. Charnley
73su	Magazine Writing and Editing	
	Section 1	Mr. Charnley
	Section 2	Mr. Kildow
82su	Supervision of School Publications	Mr. Kildow
94su	Newspaper Advertising	Mr. Barnhart
109su	History of Journalism	Mr. Ford
111su	International Communication and the Foreign Press	Mr. Natziger
130su	Communication Agencies and Public Opinion	Mr. Casey
140su	Interpretation of Contemporary Affairs	Mr. Hovey
210su	Research in Newspaper Problems	Mr. Natziger

SECOND TERM

14su	Newspaper Reporting	
	Section 1	Mr. Hage
	Section 2	Mr. Hiebert
41su	Editing (for non-majors)	
	Lectures	Mr. Emery
	Section 1	Mr. Emery
	Section 2	Mr. Wilson
55su	Advertising and Newspaper Topography	
	Lectures	Mr. Wilson
	Section 1	Mr. Wilson
	Section 2	Mr. Wilson
	Section 3	Mr. Wilson
69su	Newspaper and Magazine Articles (for minors)	Mr. Hage
101su	The Reporting of Public Affairs	Mr. Duncan
110su	History of Journalism	Mr. Emery
112su	Current Newspaper Problems	Ar.
121su	The Newspaper in a Dynamic Society	Mr. Gerald
141su	Interpretation of Contemporary Affairs	Mr. Duncan
177su	Freedom of the Press and Communications Law	Ar.

LINGUISTICS AND COMPARATIVE PHILOLOGY

FIRST TERM

Japanese

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

Russian

1su	Beginning Russian	Miss Niemi
102su	Dostoevski and Tolstoy.....	Miss Niemi

SECOND TERM

Japanese

2su	Beginning Japanese	Mrs. Syro- Boyarsky
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Russian

2su	Beginning Russian	Mrs. Blinoff
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MATHEMATICS

FIRST TERM

1su	Higher Algebra	Staff
6su	Trigonometry	Staff
7su	College Algebra	Staff
8su	Commerce Algebra	Staff
15su	Elementary Mathematical Analysis I	Staff
20su	Mathematics of Investment	Staff
30su	Analytic Geometry	Staff
50su	Calculus I—Differential Calculus	Staff
51su	Calculus II—Integral Calculus	Miss Gibbens
102su	Advanced Analytic Geometry	Miss Carlson
106su	Differential Equations	Mr. Loud
113su	Mathematical Recreations	Mr. Hatfield
114su	Mathematics of Small Vibrations.....	Mr. Hatfield
136su	Solid Analytic Geometry	Miss Carlson
160su	Numerical Methods in Computation.....	Mr. Loud
248su	Reading and Research (seminar).....	Mr. Cameron

SECOND TERM

1su	Higher Algebra	Staff
6su	Trigonometry	Staff
7su	College Algebra	Staff
16su	Elementary Mathematical Analysis II	Staff
20su	Mathematics of Investment	Staff
51su	Calculus II—Integral Calculus	Staff
105su	Intermediate Calculus	Mr. Olmsted
118su	Vector Analysis	Mr. Bearman
126su	Statistical Theory of Errors.....	Mr. Bearman
131su	Advanced Algebraic Theory	Mr. Hatfield
139su	Limits and Series	Mr. Hatfield
248su	Reading and Research (seminar).....	Mr. Cameron

MUSIC

FIRST TERM

1su	Fundamentals of Music	Ar.
1Tsu	Music Theory	Mr. Feese
3Tsu	Music Theory	Mr. Feese
11su	Piano	Miss Kendall, Mr. Rymer, Mr. Lindsay, Mrs. Hunter
12su	Voice	Miss Hull, Mr. Schuessler
13su	Violin	Miss Cullen
14su	Viola	Mr. Barton
15su	Cello	Mr. Meltzer
16su	Double Bass	Mr. Fitch
17su	Flute	Mr. Winkler, Mrs. Arnegaard
18su	Oboe	Mr. Angelucci
19su	Clarinet or Saxophone	Mr. Handlon

20su	Bassoon	Mr. Santucci
21su	Trumpet	Mr. Greco, Mr. MacKay
22su	French Horn	Mr. Linder
23su	Trombone	Mr. MacKay
24su	Tuba	Mr. MacKay
25su	Percussion	Mr. Segal
26su	Harp	Ar.
27su	Organ	Mr. Jennings
31su	Music Appreciation	Mr. Ivory
34su	History of Music	Mr. Ferguson
44su	University Chorus	Ar.
66su	Choral Chamber Group	Ar.
73-74-		
75su	Advanced Harmony	Ar.
77-78-		
79su	Composition	Mr. Ferguson, Visitor
83-84-		
85su	Advanced Composition	Mr. Ferguson, Visitor
86-87-		
88su	Orchestration	Ar.
101su	American Music	Ar.
200-201-		
202su	Basis of Music Expression	Mr. Ferguson
205-206-		
207su	Composition in Larger Forms	Mr. Ferguson, Visitor
209-210-		
211su	Advanced Topics in Musical Analysis	Mr. Oberg
212su	Special Problems in Music	Mr. Oberg

SECOND TERM

1su	Fundamentals of Music	Mr. Feese
2Tsu	Music Theory	Mr. Feese
4Tsu	Music Theory	Ar.
11su	Piano	Mr. Stephens, Mr. Rymer, Mrs. Hunter
12su	Voice	Mr. Schuessler
13su	Violin	Miss Cullen
14su	Viola	Mr. Barton
15su	Cello	Mr. Meltzer
16su	Double Bass	Mr. Fitch
17su	Flute	Mr. Winkler
18su	Oboe	Mr. Angelucci
19su	Clarinet or Saxophone	Mr. Handlon
20su	Bassoon	Mr. Santucci
21su	Trumpet	Mr. Greco, Mr. MacKay
22su	French Horn	Mr. Linder
23su	Trombone	Mr. MacKay
24su	Tuba	Mr. MacKay
25su	Percussion	Mr. Segal
26su	Harp	Ar.
27su	Organ	Mr. Berryman
32su	Music Appreciation	Mr. Ivory
45su	University Chorus	Ar.
67su	Choral Chamber Group	Ar.
73-74-		
75su	Advanced Harmony	Ar.
76su	Form and Analysis	Mr. Stephens
77-78-		
79su	Composition	Ar.
or		
86-87-		
88su	Orchestration	Ar.
212su	Special Problems in Music	Mr. Oberg

PERSONAL ORIENTATION
See General Studies, page 37.

PHILOSOPHY

FIRST TERM

1su	Problems	Mr. Holmer
2su	Logic	Mr. Wiggins
3su	Ethics	Mr. Swanson
50su	History of Philosophy (Ancient).....	Miss Shaw
70su	Philosophies of Social Reform.....	Mr. Wiggins
182su	Philosophy of Religion	Mr. Holmer
191su	Seminar	Mr. Holmer and others

SECOND TERM

1su	Problems	Mr. Holmer
2su	Logic	Mrs. Brodbeck
3su	Ethics	Mr. Swanson
63su	Principles of Mature Thinking.....	Mr. Feigl
113su	Kierkegaard and Scandinavian Philosophy.....	Mr. Holmer
115su	Contemporary Philosophy	Mrs. Brodbeck
153su	Philosophy of Science	Mr. Feigl
192su	Seminar	Mr. Feigl and others

PHYSICS

FIRST TERM

1su	Introduction to Physical Science.....	Ar.
1asu	Introduction to Physical Science.....	Ar.
4su	General Physics (Mechanics) Part I.....	Mr. Wall
6su	General Physics (Sound and Light) Part I.....	Mr. Schmitt
7su	General Physics (Mechanics) Part I.....	Mr. Oppenheimer
8su	General Physics (Electricity) Part I.....	Mr. Weinberg
73su	Intermediate Thermodynamics, Part I.....	Mr. Oppenheimer
101su	Theoretical Physics, Part I.....	Mr. Hill
107su	Modern Physics	Mr. Oppenheimer
144su	Electrical Measurements	Mr. Wall
216su	Seminar and Contemporary Theoretical Physics.....	Mr. Weinberg

SECOND TERM

2su	Introduction to Physical Science.....	Ar.
2asu	Introduction to Physical Science.....	Ar.
4su	General Physics (Mechanics) Part II.....	Mr. Ney
6su	General Physics (Sound and Light) Part II.....	Mr. Schmitt
7su	General Physics (Mechanics) Part II.....	Mr. Oppenheimer
8su	General Physics (Electricity) Part II.....	Mr. Ney
73su	Intermediate Thermodynamics, Part II.....	Mr. Ney
101su	Theoretical Physics, Part II.....	Mr. Loifgren
110su	Modern Experimental Physics	Mr. Schmitt
131su	Geometrical Optics	Mr. Valasek
134su	Experimental Optics	Mr. Valasek
136su	Spectrum Analysis	Mr. Valasek

POLITICAL SCIENCE

FIRST TERM

1su	American Government and Politics I.....	Ar.
2su	American Government and Politics II.....	Ar.
7su	Comparative European Government	Ar.
15su	Elements of Political Science.....	Mr. McLaughlin
25su	World Politics	Mr. Mills
100su	The Constitution and Social Change.....	Mr. Latham
121su	Municipal Administration	Mr. Ludwig
126su	Government and the Economic Order.....	Mr. Latham
128su	Community Planning	Mr. Ludwig

137su	American Political Parties	Mr. Christensen
141su	European Governments	Mr. McClosky
155su	Government in Latin America	Mr. Christensen
161su	Problems of Democracy	Mr. McClosky
180su	International Law	Mr. McLaughlin
195su	Colonial Government and Problems of Imperialism	Mr. Mills
201su	Seminar in American Government and Administration.....	Mr. Short
245su	Seminar in Far Eastern Government and Politics	Mr. Quigley

SECOND TERM

1su	American Government and Politics	Ar.
3su	American Government and Politics	Ar.
7su	Comparative European Government	Ar.
15su	Elements of Political Science	Ar.
104su	American Constitutional Development	Mr. McLaughlin
124su	Recent Social Legislation	Mr. Christensen
131su	Public Administration	Mr. Latham
160su	American Political Thought	Ar.
162su	Recent Political Thought	Ar.
202su	Seminar in American Government and Administration.....	Mr. Latham
299su	Seminar in International Law	Mr. McLaughlin

PSYCHOLOGY

FIRST TERM

1su	General Psychology	Mr. Clark, Mr. MacCorquodale, Mr. Dahlstrom
1su,2su	General Psychology	Mr. Gough, Mr. Gustad, Mr. Rosen, Mr. Simos
4su,5su	Introductory Laboratory Psychology	Mr. John, Mr. Levine
65su	Advanced General Psychology	Mr. MacCorquodale
70su	Principles of Psychological Measurement.....	Mr. Clark
90su	Readings in Psychology	Mr. Heron
125su, 126su	Psychology of Individual Differences	Mr. Paterson
128su	Psychology of Learning	Mr. Heron
130su	Vocational and Occupational Psychology.....	Mr. McClelland
135su, 136su	Occupational Counseling	Mr. McClelland
144su, 145su	Abnormal Psychology	Mr. Bird
210su	Research in Psychology	Mr. Heron
250su	Topics in Psychology	Mr. Heron

SECOND TERM

1su,2su	General Psychology	Mr. Dahlstrom, Mr. Gough, Mr. Rosen, Mr. Simos
2su	General Psychology	Mr. Gustad, Mr. Heron
4su,5su	Introductory Laboratory Psychology	Mr. John
90su	Readings in Psychology	Staff
111su	Frontiers of Psychology	Mr. Heron
119su	Psychology of Personality	Mr. Leeper
154su	Gestalt Psychology	Mr. Leeper
160su	Psychology in Personnel Work.....	Mr. Longstaff
171su, 172su	Introduction to Clinical Psychology	Mr. Meehl
210su	Research in Psychology	Staff
250su	Topics in Psychology	Staff

ROMANCE LANGUAGES

FIRST TERM

French

1su	Beginning French	Ar.
2su	Beginning French	Ar.
3su	Intermediate French	Ar.
4su	Intermediate French	Ar.
53su	Practical French Composition (course conducted in French)	Miss Hampl
62su†	Practical French Phonetics	Miss Hampl
111su	French Romantic Drama	Mr. May
116su	Seventeenth-Century French Literature: Corneille and Racine	Mr. May
118su	Eighteenth-Century French Literature: Diderot	Mr. Sirich

Spanish

1su	Beginning Spanish	Ar.
2su	Beginning Spanish	Ar.
3su	Intermediate Spanish	Ar.
4su	Intermediate Spanish	Ar.
53su	Spanish Composition	Ar.
73su	Latin-American Culture (course conducted in Spanish).....	Mr. Cuneo
81su	La Novela Ibero-Americana y Los Problemas Sociales.....	Mr. Cuneo
120su	Spanish Literature: The Ballad.....	Mr. Grismer
130su	Spanish Literature: Cervantes	Mr. Grismer
241su	Spanish Philology	Mr. Grismer

There will be an institute of Spanish-American studies under the direction of Professor James A. Cuneo. See page 21.

SECOND TERM

French

1su	Beginning French	Ar.
2su	Beginning French	Ar.
3-4su	Intermediate French	Ar.
54su	Practical French Conversation	Ar.
165su	French Romantic Poetry	Mr. Clefton

Spanish

1su	Beginning Spanish	Ar.
2su	Beginning Spanish	Ar.
3-4su	Intermediate Spanish	Ar.
54su	Spanish Conversation	Ar.
112su	Nineteenth-Century Spanish Poetry	Mr. Pattison
176su	Twentieth-Century Spanish Poetry	Mr. Pattison
250su	Seminar: Blasco Ibanez	Mr. Pattison

RUSSIAN

See Linguistics and Comparative Philology, page 40.

SOCIAL SCIENCE

See General Studies, page 37.

SOCIOLOGY AND SOCIAL WORK

FIRST TERM

Sociology

1su	Introduction to Sociology	Mr. Kyllonen, Mr. Johanson, Mr. Quammen, Mr. Brown
2su	Individual and Minority Group Adjustment.....	Mr. Johnson, Mr. Fisher
49su	Social Problems	Mr. Kyllonen

† Graduate students may register under French 259su.

53su	Elements of Criminology	Mr. Vold
91su	Case Method Applied to Study of Human Problems	Miss Nagel
101su	Social Organization	Ar.
102su	Contemporary Penology	Mr. Vold
114su	Rural Social Institutions	Mr. Nelson
132su	Juvenile Courts and Probation	Mr. Monachesi
160su	Population Trends and Policies	Mr. Nelson
200su	Seminar in Sociology	Staff

Social Work

213su	Field Work	Mrs. Fenlason, Mrs. Scott, Miss Whitmore, Miss Winslow
221su	Case Work II	Mrs. Scott
222su	Advanced Family Case Work	Mrs. Fenlason
236su	Personality Development as It Affects Social Case Work	Ar.
237su	Descriptive Neuropsychiatry	Dr. Aldrich
243su	Behavior Problems in Younger Children	Miss Templin
293su	Special Studies in Social Work	Mr. Kidneigh
299su	Seminar in Recent Research	Mr. Monachesi
300su	General Seminar in Social Work	Mr. Kidneigh

SECOND TERM

Sociology

1su	Introduction to Sociology	Mr. Brown, Mr. Johanson, Mr. Quammen
2su	Individual and Minority Group Adjustment	Mr. Johnson
14su	Rural Sociology	Mr. Marshall
100su	Social Psychology	Mr. Kirkpatrick
113su	Rural Community Analysis	Mr. Marshall
119su	The Family	Mr. Kirkpatrick
140su	Theories of Social Order	Ar.
161su	Social Aspects of Housing and Standards of Living	Ar.
200su	Seminar in Sociology	Staff

Social Work

214su	Field Work	Mr. Kidneigh, Miss Whitmore, and Miss Winslow
235su	Introductory Psychiatry	Dr. Hinckley
244su	Behavior Problems in Older Children	Miss Blodgett
260su	The Child and the State	Mr. Guilford
268su	Public Welfare II	Mr. Guilford
275su	Principles of Administration Applied to Social Work	Mr. Kidneigh
293su	Special Studies in Social Work	Staff
300su	General Seminar in Social Work	Staff

SPEECH

FIRST TERM

	Speech Clinic	Mr. Henrikson and staff
1-2-3su	Fundamentals of Speech	Mr. Gilkinson and staff
32su	Beginning Acting	Mrs. Turner
65su	Radio Speech	Mr. Ziebarth
66su	Radio Drama	Mr. Newgord
67su	Phonetics	Mr. Irwin
81su	Interpretative Reading	Mr. Thompson
92su	Stage Lighting	Mr. Andrus

101su	Argumentation and Persuasion	Mr. Howell
106su	Discussion	Mr. Howell
112su	Stage Direction	Ar.
122su	Introduction to Research	Mr. Gilkinson
125su	Speech for the Deaf	Miss Streng
127su	Language Training for the Deaf	Miss Streng
141su	Voice Science (Physiology of the Vocal Mechanism)	Mr. Irwin
151su	(also Ed.C.I.	
140)	Teaching of Speech	Mr. Gilkinson
153su	Problems of Hearing (Audiometry)	Mr. Hedgecock
162-		
163su	Speech Pathology	Mr. Bryngelson
164-165-		
166su	Clinical Methods in Speech Pathology	Mr. Bryngelson
173su	History of the Theater	Mr. Thompson
181su	Readings in Speech	Staff
291su	Research in Special Problems	Staff

SECOND TERM

	Speech Clinic	Mr. Henrikson and staff
1-2-3su	Fundamentals of Speech	Ar.
31su	Beginning Acting	Mr. Whiting
34su	Stagecraft	Ar.
65su	Radio Speech	Mr. Ziebarth
81su	Interpretative Reading	Mrs. Turner
82su	Interpretative Reading	Mr. Bystrom
181su	Readings in Speech	Staff
291-		
292su	Research in Special Problems	Staff

(See also Ed.C.I. 59su Speech in the Elementary Grades, Mrs. Chapman.)

ZOOLOGY

FIRST TERM

1su	General Zoology	Mr. Olson
21su	Histology	Mr. Ringoen
83su	Genetics	Ar.
117su	Animal Ecology	Mr. Eddy
170su	Advanced Genetics	Ar.
197su	Problems	Mr. Eddy, Mr. Ringoen

SECOND TERM

2su	General Zoology	Mr. Osterud
51su	Introductory Animal Parasitology	Mr. Wallace
198su	Problems	Mr. Chandler, Mr. Eddy, Mr. Osterud, Mr. Wallace

For other course offerings during the second term, see *Bulletin of the Biological Station Summer Session at Lake Itasca.*

INSTITUTE OF TECHNOLOGY

COLLEGE OF ENGINEERING AND ARCHITECTURE

AERONAUTICAL ENGINEERING

SUMMER QUARTER

1su	Aeronautics	Ar.
83su	Stresses in Simple Structures	Ar.
100su	Aerodynamics	Ar.
101su	Aerodynamics	Ar.
102su	Aerodynamics	Ar.
106su	Advanced Aerodynamics	Ar.

115su	Airplane Stresses	Ar.
117su	Advanced Airplane Stresses	Ar.
120su	Airplane Design	Ar.
121su	Airplane Design	Ar.
122su	Airplane Design	Ar.
130su	Airplane Design Laboratory	Ar.
131su	Airplane Design Laboratory	Ar.
132su	Airplane Design Laboratory	Ar.
190su	Seminar	Ar.
191su	Seminar	Ar.

SCHOOL OF ARCHITECTURE
SUMMER QUARTER

AD-Isu	Architectural Design	Ar.
AD-IIsu	Architectural Design	Ar.
AD-IIIsu	Architectural Design	Ar.
AD-IVsu	Architectural Design	Ar.

CIVIL ENGINEERING
SUMMER QUARTER

13su	Surveying	Mr. Peden
14su	Surveying	Mr. Fant
31su	Stresses in Structures	Mr. Cutts
32su	Design in Steel	Mr. Cutts
33su	Design in Timber	Mr. Cutts
38su	Structural Design	Mr. Andersen
39su	Structural Design	Mr. Andersen
41su	Structural Design	Mr. Andersen
52su	Highways and Pavements	Mr. Kersten, Mr. Dalstrom, Mr. Thomas
121su	Railway Engineering	Mr. Klingel
130su	Statically Indeterminate Structures	Mr. Wise
131su	Structural Analysis	Mr. Wise
132su	Structural Design	Mr. Wise
141su	Reinforced Concrete	Mr. Graves
142su	Reinforced Concrete Design	Mr. Graves
161su	Hydrology	Mr. Cornell
162su	Water Supply	Mr. Schroepfer, Mr. Cornell
163su	Sewerage and Sewage Treatment	Mr. Schroepfer, Mr. Cornell
233su	Advanced Foundations	Mr. Andersen
243su	Dynamics of Structures	Mr. Wise

DRAWING AND DESCRIPTIVE GEOMETRY
SUMMER QUARTER

1su	Engineering Drawing	Mr. Williams and others
2su	Engineering Drawing	Mr. Quaid and others
3su	Descriptive Geometry	Mr. Eggers and others
7su	Engineering Drawing (Chemistry and Chemical Engineering)	Mr. Springer and others
8su	Descriptive Geometry (Chemistry and Chemical Engineering)	Mr. Palmer and others
10su	Solid Geometry	Mr. Barich and others
21su	Drafting (Civil Engineering)	Mr. Myers and others

22su	Structural Detailing	Mr. Myers and others
23su	Structural Detailing	Mr. Bullen and others
26su	Drafting (Electrical Engineering)	Mr. Palmer and others
28su	Drafting (Aeronautical Engineering)	Mr. Bullen and others
29su	Drafting (Aeronautical Engineering)	Mr. Schuck and others
34su	Lettering	Mr. Quaid
55su	Production Illustration	Mr. Schuck

ELECTRICAL ENGINEERING

FIRST TERM

15su	Elements of Electrical Engineering	Mr. Cartwright and others
16su	Elements of Electrical Engineering Laboratory	Mr. Cartwright and others
38-45su	Electrical Engineering Survey	Mr. Angland and others
47su	Electrical Engineering Survey and Aeronautical Radio	Mr. Angland and others
111su	Junior Electrical Engineering	Mr. Anderson and others
112su	Junior Electrical Engineering Laboratory	Mr. Anderson and others
113su	Junior Electrical Engineering	Mr. Storm and others
114su	Junior Electrical Engineering Laboratory	Mr. Storm and others
115su	Junior Electrical Engineering	Mr. Anderson and others
116su	Junior Electrical Engineering Laboratory	Mr. Anderson and others
121su	Senior Electrical Engineering	Mr. Sanderson and others
122su	Senior Electrical Engineering Laboratory	Mr. Sanderson and others
123su	Senior Electrical Engineering	Mr. Caverley and others
124su	Senior Electrical Engineering Laboratory	Mr. Caverley and others
125su	Senior Electrical Engineering	Mr. Sanderson and others
126su	Senior Electrical Engineering Laboratory	Mr. Sanderson and others
127su	Transient Electrical Phenomena	Mr. Anderson, Mr. Huntington, Mr. Williams
128su	Transient Electrical Phenomena	Mr. Anderson, Mr. Huntington
134su	Electrical Design	Mr. Fillmore
161su	Radio Communication and Ultra High Frequency Engineering	Mr. Shepherd and others
162su	Radio Communication and Ultra High Frequency Engineering	Mr. Larson and others
163-169su	Radio Communication and Ultra High Frequency Engineering	Mr. Larson and others

SECOND TERM

109su	Electric and Magnetic Fields	Mr. Anderson and others
117su	Engineering Electronics	Mr. Anderson and others
118su	Engineering Electronics Laboratory	Mr. Anderson and others
119su	Engineering Electronics	Mr. Muckenhirn and others
120su	Engineering Electronics Laboratory	Mr. Muckenhirn and others
132su	Electrical Design	Mr. Fillmore
134su	Electrical Design	Mr. Fillmore
136su	Electrical Design	Mr. Fillmore
164su	Communication Circuits	Mr. Becklund and others
165su	Communication Circuits	Mr. Becklund and others
166su	Communication Circuits	Mr. Becklund and others
167su	Radio Communication	Mr. Larson and others
168su	Radio Communication	Mr. Larson and others

GENERAL ENGINEERING

SUMMER QUARTER

70su	Slide Rule	Mr. Barich
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MATHEMATICS AND MECHANICS

SUMMER QUARTER

11su	College Algebra	Mr. McElrath and others
12su	Trigonometry	Mr. Braden and others
13su	Analytic Geometry	Mr. Laws and others
24su	Calculus I: Differential	Mr. Fulks and others
25su	Calculus II: Integral	Mr. Evans and others
26su	Statics	Mr. Siler and others
80su	Differential Equations	Mr. Godderz and others
84su	Technical Mechanics (Chem., Chem.E., and Prebusiness)	Mr. Siler and others
85su	Strength of Materials (Chem.E., E.E., and Prebusiness)	Mr. Johnston and others
86su	Fluid Mechanics (AeroE., E.E., Chem.E.)	Mr. Smith and others
87su	Materials Testing Laboratory	Mr. Loye and others
92su	Mechanics for Architects	Mr. Scott
93su	Strength of Materials for Architects	Mr. Scott
127su	Dynamics	Mr. Wilcox and others
128su	Strength of Materials	Mr. Miller and others
129su	Fluid Mechanics	Mr. James
130su	Fluid Mechanics (M.E.)	Mr. Doeringsfeld
141su	Materials Testing Laboratory	Mr. Gavic and others
143su	Fluid Mechanics Laboratory	Mr. Scott and others

150su	Calculus III: Intermediate	Mr. Polansky
153su	Calculus V: Advanced	Mr. Turrittin
154su	Vector Analysis	Mr. Munro

MECHANICAL ENGINEERING
SUMMER QUARTER

6su	Machine Shop	Mr. Crowder and others
8su	Machine Shop	Mr. Crowder and others
11su	Materials and Processing I	Mr. Hughes and others
12su	Materials and Processing II	Mr. Holtby and others
13su	Materials and Processing III	Mr. Hughes and others
14su	Materials and Processing IV	Mr. Crowder and others
15su	Materials and Processing V	Mr. Crowder and others
16su	Materials and Processing VI	Mr. Taber and others
17su	Materials and Processing VII	Mr. Holtby and others
20su	Elementary Machine Design	Mr. Palmer
21su	Kinematics	Mr. Larsen
22su	Mechanisms	Mr. LaJoy and others
23su	Dynamics of Machinery	Mr. LaJoy and others
24su	Elements of Machine Design	Mr. Clamons
33su	Mechanical Engineering Laboratory I	Mr. Lee and others
34su	Mechanical Engineering Laboratory II	Mr. Lee and others
35su	Mechanical Engineering Laboratory III	Mr. Lee and others
40su	Heat Engines	Mr. Ritchey and others
41su	Heat Engines	Mr. Ritchey and others
55su	Internal Combustion Engines	Mr. Robertson and others
121su	Machine Design	Mr. Clamons and others
131su	Thermodynamics	Mr. Ritchey, Mr. Snyder, and others
132su	Thermodynamics	Mr. Ritchey, Mr. Snyder, and others
141su	Heat Power Engineering	Mr. Andeen and others
142su	Advanced Heat Power Engineering	Mr. Andeen and others
149su	Advanced Steam Laboratory	Mr. Andeen, Mr. Ritchey, and others
150su	Internal Combustion Engines	Mr. Robertson and others
151su	Advanced Internal Combustion Engines	Mr. Robertson and others
154su	Internal Combustion Engine Design	Mr. Robertson and others

157su	Gas Turbines and Jet Propulsion Power Plants	Mr. Robertson and others
158su	Aero Engine Testing	Mr. Murphy, Mr. Melby, and others
159su	Internal Combustion Engine Laboratory	Mr. Murphy, Mr. Melby, and others
160su	Heating and Ventilating	Mr. Algren
161su	Heating and Ventilating Design	Mr. Algren
169su	Heating and Ventilating Laboratory	Mr. Algren
171su	Elements of Industrial Engineering	Mr. Imhoff and others
172su	Industrial Plants	Mr. Imhoff and others
174su	Motion and Time Study	Mr. Imhoff and others
180su	Refrigeration	Mr. Svoboda and others
189su	Refrigeration Laboratory	Mr. Svoboda and others
190-191- 192su	Seminar	Staff
FIRST TERM		
3su	Machinery Woodworking	Mr. Taber

INSTITUTE OF TECHNOLOGY SCHOOL OF CHEMISTRY

ANALYTICAL CHEMISTRY

FIRST TERM

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

SECOND TERM

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

INORGANIC CHEMISTRY

FIRST TERM

1su	General Inorganic Chemistry	Mr. Brasted
4su	General Inorganic Chemistry	Mr. Maynard
6su	General Inorganic Chemistry	Mr. O'Brien
9su	General Inorganic Chemistry	Mr. Pray
11su	Semimicro Qualitative Analysis	Mr. Nebergall
12su	Semimicro Qualitative Analysis	Mr. Johnson
13su	Semimicro Qualitative Analysis	Mr. Heisig
103su	Special Topics in Inorganic Chemistry	Mr. O'Brien
105su	Advanced Inorganic Chemistry (Coordination Com- pounds)	Mr. Maynard
108su	Nonaqueous Systems	Mr. Pray
109su	Synthetic Inorganic Chemistry	Mr. Heisig
301su	Research in Inorganic Chemistry	Mr. Brasted, Mr. Heisig, Mr. Johnson, Mr. Maynard, Mr. O'Brien, Mr. Pray

SECOND TERM

2su	General Inorganic Chemistry	Mr. Brasted
5su	General Inorganic Chemistry	Mr. Johnson
7su	General Inorganic Chemistry	Mr. O'Brien
10su	General Inorganic Chemistry	Mr. Nebergall
11-12su	Semimicro Qualitative Analysis	Mr. Barber
102su	Advanced Semimicro Qualitative Analysis	Mr. Barber
104su	Atomic Structure and the Chemical Bond	Mr. Brasted
111su	Elements of Group IV-A	Mr. Johnson
301su	Research in Inorganic Chemistry	Mr. Barber, Mr. Brasted, Mr. Johnson, Mr. O'Brien

SUMMER QUARTER

1su	General Inorganic Chemistry	Mr. Brasted
4su	General Inorganic Chemistry	Mr. Lindeke
11su	Semimicro Qualitative Analysis	Mr. Lindeke

ORGANIC CHEMISTRY

FIRST TERM

61su	Elementary Organic Chemistry	Mr. Dodson
101su	Intermediate Organic Chemistry	Mr. Lauer
102su*	Elementary Organic Qualitative Analysis	Mr. Lauer
130su†	Organic Quantitative Analysis	Mr. Lauer
139su*	Advanced Preparations	Mr. Arnold
212su	Physico-Organic Chemistry	Mr. Arnold
301su	Research in Organic Chemistry	Mr. Arnold, Mr. Dodson, Mr. Lauer

SECOND TERM

62su	Elementary Organic Chemistry	Mr. Dodson
110su*	Advanced Organic Qualitative Analysis	Mr. Parham
142su	Chemistry of Natural Products	Mr. Parham
302su	Research in Organic Chemistry	Mr. Dodson, Mr. Parham

PHYSICAL CHEMISTRY

FIRST TERM

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

SECOND TERM

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

CHEMICAL ENGINEERING

FIRST TERM

102su	Unit Operations	
	Section 1	Mr. Madden
	Section 2	Mr. Jackson
131su	Inorganic Technology	Mr. Stephenson
132su	Organic Technology	Mr. Mann

* Limit of 20 students in courses 102, 110, and 139.

† Limit of 10 students in course 130.

§ 107bsu is a continuation of 107asu. The entire course 107(a-b)su must be completed before credit will be assigned. Grades will not be sent in at the end of the first term.

151-152su	Chemical Manufacture	Mr. Mann, Mr. Ceaglske, Mr. Stoppel, Mr. Stephenson, Mr. Jackson, Mr. Madden
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SECOND TERM

102su	Unit Operations	
	Section 1	Mr. Madden
	Section 2	Mr. Jackson
131su	Inorganic Technology	Mr. Stephenson
132su	Organic Technology	Mr. Mann .
151-152su	Chemical Manufacture	Mr. Mann, Mr. Amundson, Mr. Stephenson, Mr. Bond, Mr. Comley, Mr. Jackson, Mr. Madden

THIRD TERM

151-152su	Chemical Manufacture	Mr. Stoppel, Mr. Ceaglske, Mr. Amundson, Mr. Bond, Mr. Comley
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INSTITUTE OF TECHNOLOGY

SCHOOL OF MINES AND METALLURGY

METALLOGRAPHY

SUMMER QUARTER

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

METALLURGY

SUMMER QUARTER

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

FIRST TERM

11su	Metallurgy of Pig Iron	Mr. Joseph
12su	Metallurgy of Steel	Mr. Martin
110su	Mineral Dressing	Mr. Cooke
133su	Electrometallurgy	Mr. Martin

MINING

FIRST TERM

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

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

AGRICULTURAL BIOCHEMISTRY

FIRST TERM

1su	Elementary Organic Chemistry	Ar.
2su	Quantitative Methods	Mr. Bleidner
118su	Laboratory Problems in Biochemistry	Ar.

SECOND TERM

118su	Laboratory Problems in Biochemistry	Ar.
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AGRICULTURAL ECONOMICS

FIRST TERM

1su	Principles of Economics I (2 sections)	Mr. Lowe
107su	Farm Work Simplification	Mr. Engene
140su	Marketing Organization: Staples	Mr. Cox

SECOND TERM

2su	Principles of Economics II	Mr. Lowe
200su	General Seminar in Agricultural Economics	Staff

AGRICULTURAL EDUCATION

For list of courses in Agricultural Education, see courses listed on page 64 under the College of Education.

AGRICULTURAL ENGINEERING

FIRST TERM

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

SECOND TERM

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

AGRONOMY AND PLANT GENETICS

FIRST AND SECOND TERMS

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

ANIMAL AND POULTRY HUSBANDRY

FIRST TERM

8su	Breeds of Livestock	Ar.
56su	Livestock Feeding	Ar.
213su	Research in Animal Husbandry	Staff
214su	Research in Poultry Husbandry	Staff

SECOND TERM

57su	Livestock Feeding	Ar.
213su	Research in Animal Husbandry	Staff
214su	Research in Poultry Husbandry	Staff

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

DAIRY HUSBANDRY

FIRST AND SECOND TERMS

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

ENTOMOLOGY AND ECONOMIC ZOOLOGY

FIRST TERM

5su	Economic Entomology	Mr. Hayes, Mr. Weintraub
13su*	Field Zoology	Mr. Dawson, Mr. Harden
55su	Entomological Techniques	Mr. Milliron

FIRST AND SECOND TERMS

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

FORESTRY

FIRST TERM

(Offered at Itasca)

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

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

HOME ECONOMICS

FIRST TERM

25su	Design Applied to Crafts	Miss Myren
34su	Nutrition Problems	Mrs. Gibler
40su	Food Preparation	Mrs. Trammell
50su	Textiles	Miss Bayor
86su	Home Management: Operation and Maintenance Laboratory	
	Section 1	Miss Studley
	Section 2	Ar.
116su	Clothing Problems	Ar.
142su	Experimental Cookery	Miss Turnbull
146su	Special Food Problems	Miss Turnbull
150su	Textile Problems	Ar.
178su	Clinical Problems in Nutrition	Mrs. Gibler
179su	Readings in Nutrition	Ar.
180su	Home Planning and Furnishing	Miss Paulsen
185su	Family Relationships	Mrs. Wood
186su	Problems in Income Management	Miss Studley
295su	Home Economics Problems	Miss Paulsen

* Offered at Itasca Park.

SECOND TERM

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

HORTICULTURE

FIRST AND SECOND TERMS

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

PLANT PATHOLOGY AND BOTANY

FIRST AND SECOND TERMS

206su	Research in Plant Pathology	Mr. Stakman and others
210su	Research in Mycology	Mr. Stakman, Miss Dossdall, Mr. C. M. Christensen
257su	Research Problems in Applied Plant Physiology	Mr. Landon and others
263su	Research Problems in Agricultural Botany	Mr. Larson, Mr. Stakman, Mr. Kernkamp

RHETORIC

FIRST TERM

1su	Communications I	Mr. Humphrey
22su	Public Speaking, Sections 1 and 2	Mr. Woods
32su	Survey of English Literature II	Mr. Humphrey
51su	Exposition, Sections 1 and 2	Miss Thurston

SECOND TERM

2su	Communications II	Mr. Wright
3su	Communications III	Mr. Wright
22su	Public Speaking, Sections 1 and 2	Mr. Sandquist
51su	Exposition, Sections 1 and 2	Mr. Seidenkranz

SOILS

FIRST AND SECOND TERMS

202su*	Research Problems in Soils	Mr. Rost and staff
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BIOLOGICAL STATION OF THE UNIVERSITY OF MINNESOTA

See page 23.

LAW SCHOOL

The Law School will offer a complete quarter (June 15 to August 28) of law work with courses for both beginning and advanced students. Registration will be for the quarter, not for a single term. The following courses will be offered: Contracts, 9 credits; Actions and Equity I, 6 credits; Banking and Negotiable Paper, 6 credits; Property II, 6 credits; Briefmaking, 3 credits; Taxation, 6 credits; International Law, 6 credits; Trusts, 6 credits; Trade Regulations, 3 credits; Labor Law, 3 credits; Wills, 3 credits.

Tuition fees for the quarter are: resident, \$42; nonresident, \$90. Credit hour fee: resident, \$3.50; nonresident, \$7.50. There will be the usual incidental fee of \$10.65 for the Coffman Memorial Union, the Health Service, the *Minnesota Daily*, etc. Deposit fee for the quarter, \$2.

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

MEDICAL SCHOOL

ANATOMY

FIRST TERM

61su	Microscopic Anatomy (Dental Students)	Dr. Kirschbaum
100-101su	Gross Human Anatomy	Dr. Hartman, Dr. Williams
103su	Human Histology (Medical Students)	Dr. Kirschbaum
111su	Neuroanatomy	Dr. Rasmussen
150su	Special Topics in Neurology	Dr. Rasmussen
156su	Advanced Anatomy	Staff
159su	Experimental Study of Neoplasms	Dr. Kirschbaum
165su	Hematology	Dr. Sundberg
204su	Research in Anatomy	Staff

SECOND TERM

100-101su	Gross Human Anatomy	Dr. Williams, Dr. Hartmann
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BACTERIOLOGY AND IMMUNOLOGY

FIRST TERM

53su	General Bacteriology	Dr. DeKruif
116su	Immunity	Dr. McLimans
201su	Research	Dr. Halvorson

SECOND TERM

102su	Medical Bacteriology	Dr. Ziegler
114su	Molds, Yeasts, and Actinomycetes	Dr. Skinner
201su	Research	Dr. Skinner

MEDICINE

FIRST AND SECOND TERMS

Elective

113su	Externship in Medicine	Dr. Watson and staff
125su	Externship in Dermatology	Dr. Michelson and staff
128su*	Abnormal Physical Signs in the Chest	Dr. Greer
129su*	Advanced Physical Diagnosis	Dr. Peppard
132su*	Diagnosis and Treatment of Diseases of the Lungs	Dr. Myers
135su*	Essentials of Diagnosis and Treatment of Heart Disease	Dr. Shapiro
136su*	The Respiratory Organs in Health and Disease	Dr. Myers
159su*	Assistantship, Dermatology, and Syphilis (MGH)	Dr. Sweitzer and staff
160su*	Assistantship and Conference in Dermatology (UH)	Dr. Michelson and staff
161su*	Assistantship in Dermatology (UHD)	Dr. Michelson and staff
162su*	Assistantship in Dermatology (MGH)	Dr. Sweitzer
163su*	Treatment of Syphilis	Dr. Michelson
164su*	Seminar in Pathology	Dr. Winer
165su*	Seminar in Dermatology	Dr. Michelson and others
166su*	Allergy and Dermatology	Dr. Michelson

OBSTETRICS AND GYNECOLOGY

FIRST AND SECOND TERMS

201,204su	Advanced Obstetrics and Gynecology, Part I	Dr. McKelvey, Dr. Bellville
205,208su	Advanced Obstetrics and Gynecology, Part II	Dr. McKelvey, Dr. Bellville
209,212su	Advanced Obstetrics and Gynecology, Part III	Dr. McKelvey, Dr. Bellville

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

216,219su	Research	Dr. McKelvey, Dr. Bellville
301,302su	Externship	Dr. McKelvey, Dr. Bellville

OPHTHALMOLOGY AND OTOLARYNGOLOGY

FIRST AND SECOND TERMS

Required

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

Elective

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

PATHOLOGY

FIRST TERM

104su	Autopsies	Staff
107su	Diagnosis of Tumors	Dr. McCartney
107asu	Surgical Pathology	Dr. McCartney
109su	Clinical-Pathological Conference	Staff
111su	Conference on Autopsies	Dr. Bell and staff
201su	Research	Staff

SECOND TERM

104su	Autopsies	Staff
107su	Diagnosis of Tumors	Dr. Hebbel
107asu	Surgical Pathology	Dr. Hebbel
109su	Clinical Pathological Conference	Staff
111su	Conference on Autopsies	Dr. Bell and staff
201su	Research	Staff

PEDIATRICS

FIRST TERM

	Pediatric Externship	Dr. Adams, Dr. Jensen
156su	Advanced Study of Noncontagious Diseases	Dr. Adams
158su	Advanced Study of Contagious Diseases	Dr. Platou
162su	Common Behavior Disturbances in Childhood	Dr. Jensen, Dr. Comly
202su	Pediatric Clinic	Dr. Adams, Dr. Jensen
204su	Residency	Dr. Adams, Dr. Jensen
208su	Pediatric Research	Dr. Adams, Dr. Ziegler

SECOND TERM

	Pediatric Externship	Dr. McQuarrie, Dr. May, Dr. Ziegler
156su	Advanced Study of Noncontagious Diseases	Dr. May, Dr. McQuarrie
158su	Advanced Study of Contagious Diseases	Dr. May, Dr. Platou
202su	Pediatric Clinic	Dr. May, Dr. McQuarrie
204su	Residency	Dr. May, Dr. McQuarrie
208su	Pediatric Research	Dr. McQuarrie, Dr. May, Dr. Ziegler

PHARMACOLOGY

FIRST TERM

8su	Pharmacology for Nurses	Dr. Wright, Dr. Chadbourn, Mr. O'Dell
101su	Introduction to Pharmacology	Dr. Wright
102su	General and Experimental Pharmacology	Dr. Wright, Dr. Chadbourn, Mr. O'Dell
108su	Prescription Writing	Dr. Wright
124su	Pharmacology of Special Systems: Cardiovascular Drugs	Dr. Wright
203su	Research in Pharmacology	Dr. Wright

SECOND TERM

8su	Pharmacology for Nurses	Dr. Cranston, Dr. Chadbourn, Mr. O'Dell
102su	General and Experimental Pharmacology (continued from First Term)	Dr. Cranston, Dr. Chadbourn, Mr. O'Dell
103su	General Pharmacology	Dr. Cranston
104su	General Pharmacology	Dr. Cranston
124su	Pharmacology of Special Systems: autonomic, anti- histaminic and antispasmodic drugs	Dr. Cranston
203su	Research in Pharmacology	Dr. Cranston

PHYSIOLOGICAL CHEMISTRY

FIRST TERM

100su	Physiological Chemistry	Ar.
153su	Problems in Physiological Chemistry	Ar.
205su	Research in Physiological Chemistry	Ar.

SECOND TERM

101su	Physiological Chemistry	Ar.
153su	Problems in Physiological Chemistry	Ar.
205su	Research in Physiological Chemistry	Ar.

PHYSIOLOGY

FIRST TERM

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

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

PSYCHIATRY AND NEUROLOGY

FIRST TERM

Elective

Nonmedical Students

171su	Descriptive Neuropsychiatry	Dr. Aldrich
173su	Mental Hygiene Aspects of Public Health Nursing	Miss Shalit

SECOND TERM

70su	Introductory Psychiatry	Dr. Hinckley
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FIRST AND SECOND TERMS

Graduate Students

208su	Clinical Neurology	Dr. Baker and staff
208xsu	Clinical Psychiatry	Dr. Hastings and staff
209su	Research in Psychiatry and Neurology	Staff
212su	Survey of Neuropathology	Dr. Baker, Dr. Noran
216su	Neuropsychiatric Case Conference	Dr. Hastings and staff
226su	Neurological-Neurosurgical Conference	Dr. Baker
228su	Research in Neuropathology	Dr. Baker
240su	Externship in Psychiatry	Staff
241su	Externship in Neurology	Staff

SCHOOL OF PUBLIC HEALTH

FIRST TERM

50su	Public and Personal Health	Dr. Bates
59su	Health of the School Child	Miss Grout
62su	Principles of Public Health Nursing I	Miss Taylor
65su	Field Work in School Nursing	Miss Vroom
66su	Field Work in Rural Nursing	Miss Vroom
67su	Field Work in Family Health Agency	Miss Vroom
80su	Elementary Vital Statistics	Miss Roberts
95su	Principles of Human Nutrition	Mr. Mickelsen
100su	Elements of Preventive Medicine	Dr. Thomson
101su	Public Health Administration and Field Work	Dr. Thomson
110su	Biometric Principles	Mr. Treloar
111su	Biometry Laboratory	Mr. Treloar
125su	The Community Health Education Program	Miss Grout
170su	Supervision in Public Health Nursing	Miss Taylor
171su	Problems in Public Health Nursing	Miss Taylor
185su	Public Health Nursing Administration Workshop	Ar.
186su	Cancer Workshop	Ar.

SECOND TERM

60su	Tuberculosis and Its Control	Dr. Myers
62,63su*	Principles of Public Health Nursing I, II	Miss Mickey
63su	Principles of Public Health Nursing II	Miss Mickey
65su	Field Work in School Nursing	Miss Vroom
66su	Field Work in Rural Nursing	Miss Vroom
67su	Field Work with Family Health Agency	Miss Vroom
Ed.81su	Introduction to Education for Public Health Nurses	Ar.
101su	Public Health Administration and Field Work	Dr. Anderson
102su	Environmental Sanitation I	Mr. Pierce
106su	Public Health Administration	Dr. Anderson
171su	Problems in Public Health Nursing	Miss Mickey

RADIOLOGY

FIRST AND SECOND TERMS

Undergraduate and Graduate Students

109su	Externship in Roentgen Diagnosis and Radiation Therapy	Dr. Rigler, Dr. Stenstrom, and staff
111su	Medical Roentgenologic Conference	Dr. Rigler and staff
124su	Pediatric-Roentgenologic Conference	Dr. Rigler and staff
135c <u>su</u>	Surgical Roentgenologic Conference	Dr. Rigler and staff
163a <u>su</u>	Neurosurgical-Roentgenologic Conference	Dr. Peterson

Primarily for Graduate Students

200su	Research in Roentgenology	Dr. Rigler and staff
205su	Research Related to Radiation Therapy	Dr. Stenstrom and staff
206su	Roentgenoscopy	Dr. Rigler and staff
207su	Roentgen and Radium Therapy	Dr. Stenstrom and staff
209su	Roentgen Diagnosis	Dr. Rigler and staff
210su	Roentgen Technique	Dr. Rigler and staff
240su	Conference in Radiation Therapy	Dr. Stenstrom and staff

SURGERY

FIRST AND SECOND TERMS

GENERAL SURGERY EXTERNSHIP

The Surgery Department of the University of Minnesota Medical School, under the supervision of Dr. Owen H. Wangensteen and the surgical staff, is offering for Summer Session (June 16-August 27, 1948) an externship for a group of approximately 30 persons.

Students who have completed their sophomore or junior years or recent graduates of an approved medical school will be eligible. Participation in the program outlined will be on a voluntary basis. The facilities of the surgical staff of the University Hospitals and the Minneapolis General Hospital will be made available for the instruction of those who apply and register for this work.

An opportunity for investigation of surgical problems will be provided for qualified individuals under the supervision of the surgical staff.

For students of the University of Minnesota such course work will count as elective credits. Students of other medical colleges, with approval of their dean, may count this work toward satisfaction of surgical clerk requirements.

* For students with six months' public health nursing experience only. Others take P.H.62 in first term and P.H.63 in second term.

Required

135asu	Clinical Pathology of Tumors	Surgical staff
135bsu	Reading Course	Surgical staff
135csu	Medical-Surgical-Pathological Conference	Medical, surgical, pathological staffs
135dsu	Roentgenological-Surgical Conference	Radiology and surgical staff
135esu	Surgical Ward Conference	Surgical staff
135fsu	Outpatient Surgical Clinic, General Surgery, and Proctology	Dr. Wangensteen, Dr. Dennis, Dr. Hanson, Dr. Varco, Dr. J. K. Anderson
135gsu	Physiological-Surgical Conference	Physiology and surgical staff
135hsu	Applied Surgical Anatomy	Surgical staff
135isu	Fractures and Traumatic Surgery	MGH surgical staff

Elective

139su	Operative Surgery	Surgical staff
152su	Problems in Clinical Investigations	Dr. Wangensteen, Dr. Creevy, Dr. Peyton, Dr. Dennis, Dr. Varco
167su	Problems in Experimental Surgery	Dr. Wangensteen, Dr. Creevy, Dr. Peyton, Dr. Dennis, Dr. Varco
169su	Diagnostic Bedside Surgical Clinic	Dr. Zierold

SCHOOL OF NURSING†

FIRST TERM

Nu.Ed.60su	Ward Administration	Mrs. Randall
Nu.Ed.62su	Personnel Program in Schools of Nursing	Miss Johnston
Nu.Ed.63su	Motion Study	Ar.
Nu.Ed.65su	Analysis of Nursing Care	Miss Harrington
Nu.Ed.68su	Construction and Use of Examinations and Other Measurements in Basic Nursing Courses	Miss Johnston
Nu.Ed.72su*	Principles of Learning and Methods of Teaching in Schools of Nursing	Miss Boyle
Nu.Ed.73su	Principles of Economics in Nursing Service Administration	Miss Gorgas
Nu.Ed.85su	Fundamentals of Nursing Service Administration	Guest Instructor

SUMMER QUARTER

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

See page 26.

* A limited amount of observation may be arranged.

† For courses in Public Health Nursing, see pages 61 and 62.

COLLEGE OF EDUCATION

AGRICULTURAL EDUCATION

FIRST TERM

Agr.Ed.82su	Methods in Teaching Agriculture	Ar.
Agr.Ed.121su	Enterprise Analysis	Ar.
Agr.Ed.137su	Adult Education in Agriculture	Ar.
Agr.Ed.171su	Procedures in Teaching Agriculture	Mr. Peterson
Agr.Ed.221su	Field Problems	Mr. Peterson
Agr.Ed.232su	Research in Agricultural Education	Mr. Peterson
Agr.Ed.286su	Special Problems in Agricultural Education	Mr. Peterson

SECOND TERM

Agr.Ed.91su	Supervised Teaching Experience	Mr. Peterson
Agr.Ed.221su	Field Problems	Mr. Peterson
Agr.Ed.232su	Research in Agricultural Education	Mr. Peterson

ART EDUCATION

General courses in art formerly offered in the Department of Art Education are now offered in the Art Department in the College of Science, Literature, and the Arts. Students should consult Art Education advisers for help with programs in Art Education.

FIRST TERM

Art Ed.17su	Survey of Art in Life and Education	Mr. Gayne
Art Ed.155su	Art in Society and Education	Mr. Torbert
Art Ed.183su	Philosophy of Art Education	Mr. Severino
Art Ed.184su	Advanced Course in Methods and Supervision of Art in the Elementary School	Mr. Gayne
Art Ed.189su	Application of Esthetic Theory in Public Education	Mr. Severino
Art Ed.284Esu	Reading and Research in Art Education	Mr. Gayne
Art Ed.295su	Special Problems in Art Education	Mr. Gayne

SECOND TERM

Art Ed.19su	Survey of Art in Life and Education	Mr. Gayne
Art Ed.284Esu	Reading and Research in Art Education	Mr. Gayne
Art Ed.295su	Special Problems in Art Education	Mr. Gayne

CURRICULUM AND INSTRUCTION

FIRST TERM

General Courses

Ed.C.I.104su	Adult Education	Mr. Nolte
Ed.C.I.105su	Visual Aids in Teaching	Mr. Wendt
Ed.C.I.106su	Coordinating of Visual Education Programs	Mr. Wendt
Ed.C.I.129su	Principles and Problems of Teaching Social Hygiene	Dr. Pearce, Mr. Griffiths
Ed.C.I.145su	Remedial Reading	Mr. Tinker
Ed.C.I.172su	Workshop in Curriculum Problems—Minneapolis Group	Mr. Gilchrist, Miss Cutright, Mr. Goslin, and others
Ed.C.I.172su	Workshop in Curriculum Problems—Experimental Schools	Mr. Bossing, Mr. Grim, Mr. McLaugh- lin, and others
Ed.C.I.205su	Problems in Visual Education	Mr. Wendt
Ed.C.I.271su	Problems in Curriculum Construction	Mr. Bossing, Mr. Cook, Mr. Gilchrist
Ed.C.I.273su	Problems in Reading	Mr. Bond

Elementary Education

Ed.C.I.63su	Children's Literature	Miss Frogner
Ed.C.I.102su	Teaching the Social Studies in the Elementary School	Miss Hawkinson
Ed.C.I.103su	Teaching of Science in the Elementary School	Mr. Noll
Ed.C.I.119su	Elementary School Curriculum	Mr. Archer
Ed.C.I.130su	Problems in Childhood Education	Mrs. Fuller
Ed.C.I.143su	Teaching and Supervision of Reading in the Elementary School	Mr. Bond
Ed.C.I.149su	The Teaching and Supervision of Arithmetic in the Elementary School	Mr. Harry Johnson
Ed.C.I.150su	Supervision and Improvement of Instruction	Mr. Harry Johnson
Ed.C.I.153su	Supervision and Teaching of English in the Elementary Schools	Miss Frogner
Ed.C.I.186su	Laboratory in Elementary Instructional Practices	Mr. Staudenmaier
Ed.C.I.263su	Research in Arithmetic Instruction	Mr. Harry Johnson

Secondary Education

Ed.C.I.113su	High School Curriculum	Miss Birkmaier
Ed.C.I.122su	Literature for Adolescents	Miss Dora V. Smith
Ed.C.I.131su	Advanced Course in Teaching Technical Business Subjects in Secondary Schools	Mr. Price
Ed.C.I.133su	Consumer Education in the Secondary Schools	Mr. Price
Ed.C.I.136su	Organization and Supervision of Distributive Education Programs	Ar.
Ed.C.I.137su	Materials and Methods in Distributive Education Programs	Mr. Meyer
Ed.C.I.138su	Supervisory Training in Distributive Education	Ar.
Ed.C.I.139su	Coordination Techniques in Business Education	Mr. Meyer
Ed.C.I.140su	Teaching of Speech (also listed as Speech 151su)	Mr. Gilkinson
Ed.C.I.142su	Evening Distributive Education Classes	Ar.
Ed.C.I.144su	Teaching of Reading in Junior and Senior High Schools	Mr. Tinker
Ed.C.I.204su	Social Studies Curriculum	Miss Hawkinson
Ed.C.I.225su	Special Problems in Supervision of Instruction in Secondary Schools	Mr. Boardman
Ed.C.I.238su	Problems in Distributive Education	Mr. Meyer
Ed.C.I.239su	Problems in Business Education	Mr. Price
Ed.C.I.266su	Supervision of High School Instruction	Mr. Boardman
Ed.C.I.287su	Advanced Course in the Teaching of Science	Mr. Noll
Ed.C.I.294su	Advanced Course in Methods of Teaching English	Miss Dora V. Smith
Ed.C.I.296su	Special Problems in Teaching English	Miss Dora V. Smith

Higher Education

Ed.C.I.228su	Workshop: Problems of Higher Education and Teacher Training	Mr. Cooper, Mr. Furrow, and others
Ed.C.I.250su	Higher Education in the United States	Miss Eckert
Ed.C.I.252su	Effective College Teaching	Mr. Oppenheimer
Ed.C.I.285su	Professional Education of Teachers	Mr. G. Lester Anderson

SECOND TERM

General Courses

Ed.C.I.105su	Visual Aids in Teaching	Mr. Luce
Ed.C.I.107su	Radio in Education	Mr. Tyler
Ed.C.I.114su	The School Health Education Program	Miss Starr
Ed.C.I.117su	Rural Education for Administrators and Teachers	Mr. Archer

Ed.C.I.145su	Remedial Reading	Mr. Bond
Ed.C.I.207su	Problems in Radio Education	Mr. Tyler
Ed.C.I.271su	Problems in Curriculum Construction	Mr. Cook, Mr. McLaughlin
Ed.C.I.273su	Problems in Reading	Mr. Bond

Elementary Education

Ed.C.I.59su	Speech in the Elementary Grades	Mrs. Chapman
Ed.C.I.102su	The Teaching of the Social Studies in the Elementary School	Miss Layman
Ed.C.I.103su	Teaching of Science in the Elementary School	Mr. Kenneth Anderson
Ed.C.I.119su	Elementary School Curriculum	Mr. Harry Johnson
Ed.C.I.143su	Teaching and Supervision of Reading in the Elementary School	Mr. Bond
Ed.C.I.150su	Supervision and Improvement of Instruction	Mr. Harry Johnson
Ed.C.I.187su	Workshop in Rural and Village School Problems	Mr. Archer and others

Secondary Education

Ed.C.I.113su	High School Curriculum	Mr. McLaughlin
Ed.C.I.132su	Teaching Basic Business Subjects in the Secondary Schools	Mr. Price
Ed.C.I.133su	Consumer Education in the Secondary Schools	Mr. Price
Ed.C.I.139su	Coordination Techniques in Business Education	Mr. Meyer
Ed.C.I.141su	Cooperative Part-time Distributive Education Classes	Mr. Meyer
Ed.C.I.168su	Current Developments in the Social Studies	Miss Layman
Ed.C.I.169su	Extracurricular Activities	Mr. McLaughlin
Ed.C.I.238su	Problems in Distributive Education	Mr. Meyer
Ed.C.I.239su	Problems in Business Education	Mr. Price
Ed.C.I.266su	Supervision of High School Instruction	Mr. Robert Keller

EDUCATIONAL ADMINISTRATION

FIRST TERM

General Courses

Ed.Ad.124su	Public School Administration	Mr. Oppenheimer
Ed.Ad.210su	Financial Aspects of Public School Business Administration	Mr. Domian
Ed.Ad.225su	Pupil Personnel Administration	Mr. Cramer
Ed.Ad.226su	School Plant Planning and Management	Mr. Domian
Ed.Ad.227su	Teacher and Employee Administration	Ar.
Ed.Ad.228su	Special Problems in Educational Administration	Mr. Neale
Ed.Ad.230su	Public Relations for Schools	Ar.
Ed.Ad.235su	Seminar in Educational Administration	Mr. Neale

Elementary Education

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

Ed.Ad.133su	Guidance in Secondary Schools	Mr. Dugan
Ed.Ad.218su	Recent Literature in Secondary Education	Mr. Boardman
Ed.Ad.263su	The Organization of the Secondary School	Mr. Robert Keller
Ed.Ad.264su	The Administration of the Instructional Activities of the Secondary School	Mr. Stout
Ed.Ad.270su	Special Problems in Secondary Education	Mr. Boardman

Higher Education

Ed.Ad.274su	The Junior College	Miss Eckert
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SECOND TERM

General Courses

Ed.Ad.124su	Public School Administration	Mr. Neale
Ed.Ad.210su	Financial Aspects of Public School Business Administration	Mr. Domian
Ed.Ad.225su	Pupil Personnel Administration	Mr. Cramer
Ed.Ad.226su	School Plant Planning and Management	Mr. Domain
Ed.Ad.227su	Teacher and Employee Administration	Ar.
Ed.Ad.228su	Special Problems in Educational Administration	Mr. Neale
Ed.Ad.230su	Public Relations for Schools	Ar.
Ed.Ad.235su	Seminar in Educational Administration	Mr. Neale

Elementary Education

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

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

EDUCATIONAL PSYCHOLOGY

FIRST TERM

General Courses

Ed.Psy.60su	Introduction to Measurement and Statistics	Mr. Van Wagenen
Ed.Psy.120su	Basic Principles of Measurement	Mr. Cook
Ed.Psy.140su	Instruments and Techniques of Measurement	Ar.
Ed.Psy.150su	Psychoeducational Clinic	Mr. Bond
Ed.Psy.159su	Personality Adjustments in Education	Mr. Walter Johnson
Ed.Psy.208su	Methods in Educational Research	Mr. Palmer O. Johnson
Ed.Psy.216su	Statistical Methods in Education	Mr. Palmer O. Johnson
Ed.Psy.225su	Diagnosis and Counseling in a Student Personnel Program	Ar.
Ed.Psy.233su	Problems in Guidance and Personnel Work	Mr. Dugan
Ed.Psy.253su	Research Problems	Mr. G. Lester Anderson, Mr. Cook, Mr. Palmer O. Johnson, Mr. Van Wagenen
Ed.Psy.281su	Practice in Personnel Work: Guidance Clinic, Student Counseling Bureau Section	Miss Hagenah
Ed.Psy.293su	Psychology of Learning	Mr. G. Lester Anderson

Elementary Education

Ed.Psy.114su	Psychology of Elementary School Subjects	Mr. Van Wagenen
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Secondary Education

Ed.Psy.133su	Guidance in Secondary Schools	Mr. Dugan
Ed.Psy.281su	Practice in Personnel Work	Mr. Dugan

SECOND TERM

General Courses

Ed.Psy.60su	Introduction to Measurement and Statistics	Mr. Palmer O. Johnson
Ed.Psy.120su	Basic Principles of Measurement	Mr. Cook
Ed.Psy.159su	Personality Adjustments in Education	Mr. Bordin
Ed.Psy.217su	Statistical Methods in Education	Mr. Palmer O. Johnson
Ed.Psy.226su	Diagnosis and Counseling in a Student Personnel Program	Mr. Bordin
Ed.Psy.233su	Problems in Guidance and Personnel Work	Mr. Dugan, Mr. Bordin
Ed.Psy.253su	Research Problems	Mr. G. Lester Anderson, Mr. Palmer O. Johnson, Mr. Van Wagenen
Ed.Psy.293su	Psychology of Learning	Mr. G. Lester Anderson
Ed.Psy.294su	Recent Theory and Research in Human Learning	Mr. G. Lester Anderson

Elementary Education

Ed.Psy.183su	Education of Gifted Children	Mr. Van Wagenen
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Secondary Education

Ed.Psy.133su	Guidance in Secondary Schools	Mr. Dugan
Ed.Psy.158su	Psychology of Adolescence	Mr. Nickerson
Ed.Psy.281su	Practice in Personnel Work	Mr. Dugan

GENERAL EDUCATION

FIRST TERM

Ed.51Asu	Introduction to Secondary School Teaching	Mr. Nickerson
Ed.51Bsu	Introduction to Secondary School Teaching	Mr. Mitchell
Ed.51Csu	Introduction to Secondary School Teaching	Mr. Kenneth Anderson

SECOND TERM

Ed.51Asu	Introduction to Secondary School Teaching	Mr. Van Wagenen
Ed.51Bsu	Introduction to Secondary School Teaching	Mr. Mitchell
Ed.51Csu	Introduction to Secondary School Teaching	Mr. Robert Keller
Ed.81su	Introduction to Education for Public Health Nurses	Ar.

HISTORY AND PHILOSOPHY OF EDUCATION

FIRST TERM

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

SECOND TERM

H.Ed.131su	Comparative Education	Mr. Beck
H.Ed.180su	The School and the Social Order	Mr. Beck

HOME ECONOMICS EDUCATION

FIRST TERM

H.E.Ed.191su	Advanced Course in the Teaching of Home Eco- nomics	Miss Rose
H.E.Ed.194Asu	Adult Education in Home Economics	Mrs. Wood

INDUSTRIAL EDUCATION

A definite schedule of courses for this department could not be prepared early enough for inclusion in the *Preliminary Announcement*. Offerings in manipulative subjects will be enhanced by new spaces and equipment. Professional subjects will be given in both summer terms and will be of both undergraduate and graduate level. The schedule is being planned in view of increasing enrolment and in an attempt to satisfy individual and group desires as to type of instruction and special working arrangements. Interested persons, both women and men, should request the dean of Summer Session, 419 Administration Building, to mail the regular Summer Session *Bulletin* which is now in preparation.

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

Bulletins of the College of Education and of the Graduate School may be obtained from the Office of Admissions and Records, 105 Administration Building. Supplementary mimeographed materials may be secured from and letters of inquiry may be addressed to the Department of Industrial Education, 103 Temporary, near University High School, University of Minnesota, Minneapolis 14, Minnesota.

METHODS AND DIRECTED TEACHING

FIRST TERM

General Courses

Ed.T.52su Directed Teaching Mr. Grim

Elementary Education

Ed.T.56su Methods and Observation in the Nursery School
and Kindergarten Miss Headley,
Miss Peterson

Ed.T.57su Nursery School-Kindergarten Laboratory in Art,
Literature, and Social Studies Miss Headley

Secondary Education

Ed.T.66Amsu The Teaching of Composition in Secondary
Schools Miss Nygaard

Ed.T.66Bmsu The Teaching of Literature in Secondary Schools Miss Nygaard

Ed.T.67AmBmsu The Teaching of Secondary School Mathematics Mr. Donovan
Johnson

Ed.T.68AmBmsu Methods of Teaching Secondary School Science ... Mr. Kenneth
Anderson

Ed.T.69AmBmsu Methods of Teaching History and Social Studies ... Mr. McLendon

MUSIC EDUCATION

FIRST TERM

Mu.Ed.50Asu Primary Methods Mr. Winslow

Mu.Ed.60su Supervising and Teaching Mr. Winslow

Mu.Ed.64su Band Organization Mr. Prescott

Mu.Ed.68su Conducting of Instrumental Music and Survey of
Materials Mr. Ivory

Mu.Ed.105Esu Advanced Topics in Instrumental Music Education Mr. Ivory

Mu.Ed.110su Band Workshop Mr. Prescott

Mu.Ed.110su General Music Education Workshop Mr. Winslow,
Mr. Ivory,
Mr. Prescott,
Mr. Nickerson

Mu.Ed.224Esu	Seminar and Individual Research Problems in Music Education	Mr. Winslow, Mr. Nickerson
SECOND TERM		
Mu.Ed.50Asu	Primary Methods	Mr. Winslow
Mu.Ed.50Bsu	Intermediate Methods	Mr. Winslow
Mu.Ed.65su	Instrumentation	Mr. Ivory
Mu.Ed.224Esu	Seminar and Individual Research Problems in Music Education	Mr. Winslow

PHYSICAL EDUCATION FOR MEN

FIRST TERM

1A,B,Csu	Beginning Swimming	Mr. Boyce
2A,B,Csu	Intermediate Swimming, Tennis, Bowling, Golf	Mr. Bartelma, Mr. Bolstad, Mr. Boyce, Mr. Young
4A,B,Csu	Fundamentals of Football, Basketball, Track	Mr. Svendsen, Mr. MacMillan, Mr. Kelly
5Asu	Touchball, Six-Man Football, Conditioning	Mr. Shawbold
5Bsu	Gymnastics	Mr. Shawbold
6Asu	Soccer, Speedball, Volleyball	Mr. Shawbold
6Csu	Aquatics	Mr. Boyce
7Asu	Active and Social Games	Mr. Shawbold
7Bsu	Boxing and Wrestling	Mr. Bartelma
9Asu	Folk Dancing	Mr. Piper
50su	Human Anatomy	Mr. Osell
55su	Methods in Physical Education	Mr. Bartelma
56su	Introduction to Community Recreation	Mr. Rickman
60su	Prevention and Care of Injuries	Mr. Stein
63su	Organization and Administration of Physical Education	Mr. Piper
65su	Adapted Physical Education Program	Mr. Osell
67,68,69su	Coaching of Football, Basketball, Track	Mr. Bierman, Mr. MacMillan, Mr. Kelly
73,74,75su	Student Teaching in Physical Education	Mr. Piper
101su	Principles of Physical Education	Mr. Keller
116Esu	Community Recreation Resources and Organization	Mr. Rickman
135su	Tests and Measurements in Physical Education	Mr. Keller
233su	Special Administrative Problems in Physical Education in Secondary Schools	Mr. Nordly
247su	Problems in Health Education, Physical Education, and Recreation	Mr. Nordly
250su	Administration of Health Education, Physical Education, and Recreation	Mr. Nordly

SECOND TERM

1A,B,Csu	Beginning Swimming	Mr. Boyce
2A,B,Csu	Intermediate and Advanced Swimming, Tennis, Handball, Squash Rackets	Mr. Boyce, Mr. Piper
5Csu	Softball, Stunts	Mr. Shawbold
6Bsu	Handball, Squash, Hockey	Mr. Shawbold
6Csu	Aquatics	Mr. Boyce
7Csu	Individual and Dual Sports	Mr. Shawbold
8su	Tennis and Golf	Mr. Piper, Mr. Bolstad
9Bsu	American Country and Ballroom Dancing	Mr. Piper
32su	Introduction to Physical Education	Mr. Bartelma
51su	Mechanics of Movement	Mr. Osell

66su	Officiating Football and Basketball	Mr. Piper
103su	Physical Examination	Mr. Osell
234su	The Secondary School and College Curriculum in Physical Education	Mr. Nordly
236su	Recent Literature and Research in Health Educa- tion, Physical Education, and Recreation	Mr. Nordly
247su	Problems in Health Education, Physical Educa- tion, and Recreation	Mr. Nordly

PHYSICAL EDUCATION FOR WOMEN

FIRST TERM

7su	Tennis for Beginners	Miss Bermingham
8su	Golf for Beginners	Miss Bermingham
11su	Elementary Modern Dance	Miss Sauthoff
12su	Social Recreation: Ballroom, Country Dance, and Mixers	Miss Sauthoff
13su	Tumbling, Stunts, Pyramids	Ar.
21su	Team Sports	Miss Zierner
32su	Elementary Swimming	Miss Eibner
33su	Intermediate and Advanced Swimming	Miss Eibner
37su	Individual and Dual Games	Miss Jaeger
41su	Officiating Team Sports	Miss Zierner
41su	Intermediate and Advanced Modern Dance	Miss Sauthoff
41su	Gymnastics and Apparatus Work	Miss Bermingham
61su	Technique of Teaching Team Sports	Miss Zierner
65su	Technique of Teaching Individual and Dual Games	Miss Jaeger
84su	Problems in Physical Education	Miss Jaeger
90su	Student Teaching	Ar.
112su	Supervision of Physical Education	Miss Baker

SECOND TERM

1su	Games for Recreation	Ar.
7su	Tennis for Beginners	Miss Jaeger
8su	Elementary Golf	Miss Jaeger
12su	Social Recreation	Ar.
21su	Team Sports	Ar.
25su	First Aid	Miss Jaeger
32su	Elementary Swimming	Miss Eibner
33su	Intermediate and Advanced Swimming	Miss Eibner
41su	Officiating Team Sports	Ar.
64su	Technique of Teaching Group Gymnastics	Ar.
Ed.T.83su	Methods and Materials of School Health Educa- tion	Ar.
84su	Problems of Physical Education in Public Schools	Ar.
Ed.C.I.114su	The School Health Education Program	Miss Starr
118su	Problems of Teacher Education in Health, Physi- cal Education and Recreation	Miss Starr

SCHOOL OF BUSINESS ADMINISTRATION

FIRST TERM

Econ.3su	Elements of Money and Banking	Ar.
Econ.5su	Elements of Statistics	Mr. Belcher and others
Econ.6su	Principles of Economics	Ar.
Econ.22su	Principles of Accounting	Mr. Lund and others
Econ.32su	Beginning Typewriting	Miss Peterson
Econ.39su	Intermediate Shorthand	Miss Peterson
Econ.50su	Insurance Principles	Mr. Graves

B.A.51su	Business Law: Contracts	Mr. Neville
B.A.86su	Office Management	Miss Donaldson
B.A.89su	Production Management	Mr. Filipetti
B.A.91su	Tabulating Equipment Laboratory	Mrs. Boehmler
B.A.93su	Accounting Laboratory	Mrs. Boehmler
B.A.101su or Econ.103su	Advanced General Economics	Mr. Boddy and others
B.A.112su	Business Statistics	Mr. Mudgett
B.A.118su	Auditing Procedure	Mr. Lund
B.A.130su	Cost Accounting Survey	Mr. Wheeler
B.A.134su	Income Tax Accounting	Mr. Reighard
B.A.136su	Internal Auditing and Accounting Control	Mr. Reighard
Econ.140su	The Cooperative Movement	Mr. Vaile
Econ.142su	Monetary and Banking Policy	Mr. Uppgren
B.A.146su	Investments	Mr. Stehman
B.A.150su	Intermediate Accounting	Mr. Nelson
B.A.152su	Cost Accounting	Mr. Wheeler
Econ.155su	Corporation Finance	Mr. Uppgren
Econ.161su	Labor Problems and Trade Unionism	Mr. Childs
Econ.162su	Labor and Socialist Movements	Mr. Kuhlmann
B.A.167su	Introduction to Industrial Relations	Mr. Childs
Econ.172su or B.A.71su	Economics of Transportation	Mr. Nightingale
Econ.175su	Government Regulation of Business	Mr. Papandreou
Econ.178su	Economics of Consumption	Miss Canoyer
B.A.180Csu	Senior Topics: Market Research	Miss Canoyer
B.A.180Dsu	Senior Topics: Industrial Relations	Mr. Yoder
B.A.183su	Senior Practice	Mr. Reighard
B.A.184su	Scientific Management in Industry	Mr. Filipetti
Econ.185su or B.A.77su	Economics of Marketing	Mr. Vaile
Econ.189su or B.A.58su	Principles of Taxation	Mr. Borak

SECOND TERM

Econ.3su	Elements of Money and Banking	Ar.
Econ.5su	Elements of Statistics	Mr. Belcher and others
Econ.7su	Principles of Economics	Ar.
Econ.23su	Principles of Accounting	Ar.
B.A.52su	Business Law: Agency, Partnership, and Corpora- tions	Mr. Neville
B.A.68su	Sales Management	Mr. Lewis
B.A.89su	Production Management	Mr. Luther
B.A.91su	Tabulating Equipment Laboratory	Mrs. Boehmler
B.A.93su	Accounting Laboratory	Mrs. Boehmler
B.A.94su	Cost Accounting Laboratory	Mr. Anderson
B.A.102su or Econ.104su	Advanced General Economics	Mr. Boddy
B.A.112su	Business Statistics	Mr. Cooke
B.A.133su	Standard Costs	Mr. Ostlund
Econ.142su	Monetary and Banking Policy	Mr. Myers
Econ.149su	Business Cycles	Mr. Myers
B.A.151su	Intermediate Accounting	Mr. Heilman
B.A.153su	Cost Accounting	Mr. Ostlund
Econ.161su	Labor Problems and Trade Unionism	Mr. Childs
B.A.167su	Introduction to Industrial Relations	Mr. Childs
B.A.170su	Motion Economy	Mr. Luther
B.A.180Asu	Senior Topics: Accounting	Mr. Heilman
Econ.185su or B.A.77su	Economics of Marketing	Mr. Lewis

INSTITUTE OF CHILD WELFARE

FIRST TERM

C.W.40su	Child Training	Mrs. Cummings
C.W.80su	Child Psychology	Miss Peterson
C.W.131su	Personality, Emotional, and Social Development of the Child	Miss Templin
C.W.140su	Behavior Problems in Younger Children (same as S.W. 243su)	Miss Templin
C.W.150su	Problems of Childhood Education (same as Ed.C.I. 130su)	Mrs. Fuller
C.W.151su	Childhood Education	Mrs. Fuller
C.W.170su	Parent Education	Mrs. Cummings
C.W.270su	Readings and Research in Child Development.....	Staff

See also courses listed under Methods and Directed Teaching, College of Education, page 69.

SECOND TERM

C.W.80su	Child Psychology	Ar.
C.W.130su	Motor, Linguistic, and Intellectual Development of the Child	Mr. Harris
C.W.132su	Later Childhood and Adolescence	Mr. Harris
C.W.141su	Behavior Problems in Older Children (same as S.W. 244su)	Miss Blodgett
C.W.142su	Psychology of Atypical Children	Miss Blodgett
C.W.270su	Readings and Research in Child Development.....	Mr. Harris

LIBRARY INSTRUCTION

FIRST TERM

Eight-week term: June 14 to August 6

Lib.Sci.50su	Libraries and Society	Mr. Strout
Lib.Sci.51su	Origins of the Book	Ar.
Lib.Sci.53su	School Library Administration and Practice.....	Ar.
Lib.Sci.54su	Public Library Administration	Ar.
Lib.Sci.55su	College Library Administration	Mr. Strout
Lib.Sci.56su	Current Issues	Ar.
Lib.Sci.60su	Sources of Information about Library Materials....	Ar.
Lib.Sci.61su	Library Practice	Mr. Strout and others
Lib.Sci.62su	Reference I	Ar.
Lib.Sci.64su	Reference III	Mr. Strout
Lib.Sci.72su	Reading Guidance for Adolescents	Ar.
Lib.Sci.73su	Reading Guidance for Adults	Ar.
Lib.Sci.85su	Special Problems	Mr. Strout and others
Pol.Sci.121su	Municipal Administration	Mr. Ludwig

GENERAL COLLEGE

FIRST TERM

1Asu	Individual Orientation	Mr. Gamelin
1Bsu	Individual Applications of Social Psychology.....	Mr. Gamelin
2su	Vocational Orientation	Mr. Borow
4su	Problems of Contemporary Society	Mr. McCune
7Dsu	Physical Science: Elements of Geology	Mr. Harris
8su	Fundamentals of Mathematics	Ar.
10ABsu	Human Biology	Mr. Cieslak
15su	Clothing Selection, Purchase, and Care	Miss Bayor

22Asu	Art Today	Mr. Hulse
23Asu	Art Laboratory	Mr. Hulse
24Asu	Music Today	Mrs. Yohe
30Asu	Literature Today: The Individual and Literature	Miss Kivits
30Esu	Literature Today: An Introduction to World Lit- erature	Mr. Appel
31Asu	Writing Laboratory: Practice in Effective Writing	Mr. Appel
31Bsu	Writing Laboratory: Organization and Writing	Miss Kivits
31Dsu	Writing Laboratory: Business Writing	Miss Sheldon
32Asu	Speech Laboratory: Personality and Language	Mrs. Graves
32Bsu	Speech Laboratory: Voice and Interpretation	Mrs. Graves
33Asu	Speech Studio	Ar.
37su	Social Trends and Problems	Mr. Goff
38su	General Geography	Mr. Jennings
39su	General Anthropology	Mr. Winchester
40Asu	Introduction to Philosophy	Mr. Ahlén
42ABsu	Human Development and Personal Adjustment.....	Mr. Martin
44Bsu	Current History	Mr. McCune
45Asu	The United States in World Civilization (to 1865)	Mr. deVeau
45Bsu	American Economic and Social Development.....	Mr. deVeau

SECOND TERM

7Csu	Physical Science: The Nature of Chemistry	Mr. Harris
10Absu	Human Biology	Miss Yakaitis
23Asu	Art Laboratory	Mr. Hulse
23Bsu	Introduction to Commercial Art	Mr. Hulse
24Bsu	Music Today	Mrs. Yohe
30Csu	Literature Today: Themes in Current Literature	Miss Draxten
31Bsu	Writing Laboratory: Organization and Writing	Miss Draxten
31Dsu	Writing Laboratory: Business Writing	Ar.
32Csu	Speech Laboratory: Speech Organization	Mr. Newgord
33Bsu	Speech Studio	Mr. Newgord
37su	Social Trends and Problems	Mr. Goff
40Bsu	Straight and Crooked Thinking	Mr. Ahlén
44Bsu	Current History	Mr. deVeau
45Asu	The United States in World Civilization (since 1865)	Mr. deVeau

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Bulletin

of the

University of Minnesota

INSTITUTE OF CHILD WELFARE

Summer Session, 1948

First Term, June 14 to July 23—Second Term, July 26 to August 27

BULLETIN OF THE UNIVERSITY OF MINNESOTA

INSTITUTE OF CHILD WELFARE

JOHN E. ANDERSON, Ph.D., Director

SUMMER SESSION, 1948

Vol. LI

Number 7

January 16, 1948

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

Devoted to a three-fold program which includes research in child development, the training of teachers, and state-wide services in the fields of parent education, family life, and child guidance, the Institute of Child Welfare is offering expanded opportunities to the 1948 summer student.

The needs of graduate and undergraduate students have been considered in planning course offerings which are both broad and deep: courses in methods and observation in the nursery school and kindergarten; the theoretical bases and philosophical trends in early childhood education; child development from the earliest, practically oriented course in child care up to and including individually guided reading programs designed for individual needs. The student will learn what research findings have contributed and are contributing to our knowledge of human development, and how significant research is planned and carried out. Emphasis is placed on the application of knowledge—to techniques in parent education, to the study of problems of development and behavior, and to educational techniques.

Students already working in the field of human relationships, finding their knowledge and skill challenged by "on the job" problems, derive special satisfactions from the summer-school learning atmosphere. The opportunities for intensive study in the student's field of greatest interest are enhanced by special projects, conferences, and discussions to supplement course requirements.

Although the Institute's program is designed first of all to meet professional needs, an increasing number of students are selecting courses here as electives, sometimes to broaden their knowledge beyond their own field of specialization, sometimes to orient them in a field related to their own, whether it be psychology, nursing, medicine, social work, or secondary education. In our culture today there is an increased interest in knowledge for parenthood, and many students elect work in this field to increase their understanding as parents or future parents.

The excellent library facilities of the University of Minnesota and the special recreational and cultural summer programs, which include sightseeing tours, sports, summer theater productions, and musical activities, add to the pleasure and profit of a summer's study at the Institute of Child Welfare.

THE DEVELOPMENTAL APPROACH

The points of view of the research psychologist, the teacher, and the clinician are the outgrowth of a common basis of factual knowledge. Upon this broad, steady framework is built the specialized knowledge for each type of specialized



THE EDUCATOR'S NEEDS

Teachers are the evolutionists of education. It is they who must continually modify practices in the direction of matching theory; it is in their work that theory must meet the rigid tests of application. Teachers will find in the courses planned especially for them not only information and techniques, but also the invaluable attitude of knowledge tempered by experience.

Methods and observation in nursery school and kindergarten introduces the prospective teacher to the "how" of early childhood education. Through their own analyses of materials and procedures, students begin the building of their own teaching skills. In the *laboratory of art, literature, and social studies*, the student, herself, has the rare opportunity of experiencing the satisfactions derived from creative learning. Exploring the expressive possibilities of clay, painting, story writing, and story telling gives the student new insight into the meaningfulness to the child of these varied forms of self-expression.

In *childhood education and problems of childhood education*, students will find a seminar-like atmosphere. Examination of philosophy and its translation into materials and methods is invaluable to the student who would gain in understanding. The nursery school and kindergarten, in operation during the first term of the Summer Session, enrich the program through permitting observation of the children.

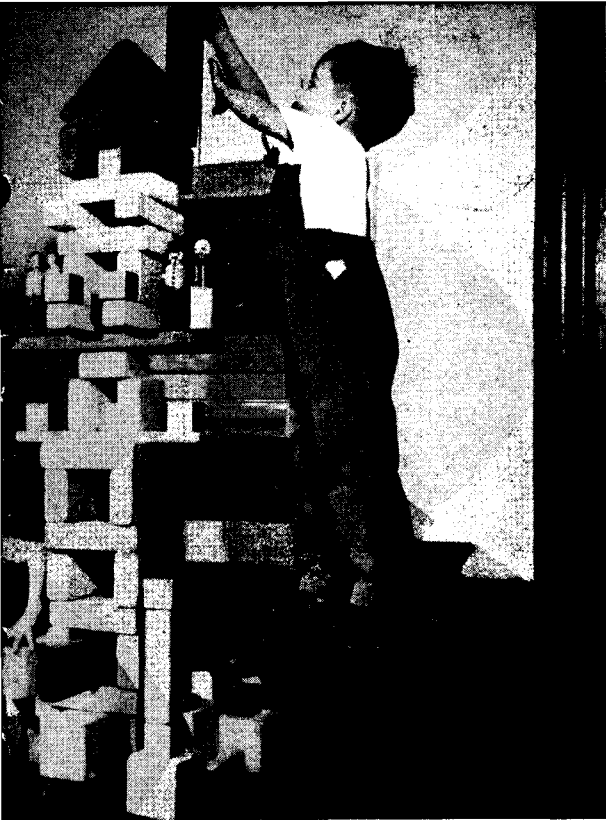


needs for understanding and guidance, and in courses with clinical emphasis, students are given help in gaining competence to meet these demands.

Parent education introduces the student to techniques of working with adult individuals and groups; it surveys the growth and changes in a field which has developed rapidly and in varying directions under the sponsorship of many interested agencies; it brings together in usable form the viewpoints, the methods, and the knowledge of available facilities.

Behavior problems of younger children and behavior problems of older children consider the nature and causes of problem behavior; they discuss danger points of stress and strain inherent in situations and in attitudes of parents and child, emphasizing the psychological processes underlying problem behavior and methods of manipulating circumstances and treating the child to establish a more satisfactory adjustment. *The psychology of atypical children* deals with physical and mental deviations, their effects on behavior and personality, and ways of fulfilling the potentialities of children so handicapped through special education, guidance, and vocational adjustment.

The Parent Consultation Service operated during the regular school year by the Institute of Child Welfare to study children and to give help to parents may find it possible to give selected students limited opportunities for studying clinical techniques in action during the Summer Session.



work. This framework is found in the developmental sequence, a series of courses which trace the growth processes in increasingly complete fashion.

Child care and training provides observation of small children and stresses the desirable ways of meeting their basic needs. *Child psychology* goes beyond the problems of care to consider particularly processes of development and their psychological significance. *Motor, linguistic, and intellectual development of the child*, and *personality, emotional, and social development of the child*, and *later childhood and adolescence* are courses which bring together for detailed consideration the methods and results of research in these areas and provide an opportunity for the student to integrate in his own thinking the philosophies prevalent in the field as a whole. *The readings and research in child development* course is individually planned to fill gaps in the student's background or to increase his competence in his chosen area of specialization. Students who are carrying full-time positions away from the campus find this course useful as a basis for a supervised study program.

THE CLINICAL APPROACH

For many people with professional interest in children, the deepest satisfactions are to be found in direct work with individuals rather than with groups. The increasingly complex civilization of our times has highlighted individual

INSTITUTE OF CHILD WELFARE

FIRST TERM

C.W.40su	Child Training	Mrs. Cummings
C.W.80su	Child Psychology	Miss Peterson
C.W.131su	Personality, Emotional, and Social Development of the Child	Miss Templin
C.W.140su	Behavior Problems in Younger Children (Same as S.W.243su)	Miss Templin
C.W.150su	Problems of Childhood Education (Same as Ed.C.I.130su)	Mrs. Fuller
C.W.151su	Childhood Education	Mrs. Fuller
C.W.170su	Parent Education	Mrs. Cummings
C.W.270su	Readings and Research in Child Development	Staff
Ed.T.56su	Methods and Observation in Nursery School and Kindergarten	Miss Headley and Miss Peterson
Ed.T.57su	Nursery School-Kindergarten-Laboratory in Art, Literature, and Social Studies	Miss Headley

SECOND TERM

C.W.80su	Child Psychology	Miss Holbrook
C.W.130su	Motor, Linguistic, and Intellectual Development of the Child	Mr. Harris
C.W.132su	Later Childhood and Adolescence	Mr. Harris
C.W.141su	Behavior Problems in Older Children (Same as S.W.244su)	Miss Blodgett
C.W.142su	Psychology of Atypical Children	Miss Blodgett
C.W.270su	Readings and Research in Child Development	Mr. Harris

For further information, please write to:

**Dean of the Summer Session
University of Minnesota
Minneapolis 14, Minnesota**

The Bulletin of the
UNIVERSITY of MINNESOTA

The 56th Summer Session
Announcement of Courses
1948

First Term June 14 to July 23
Second Term July 26 to August 28

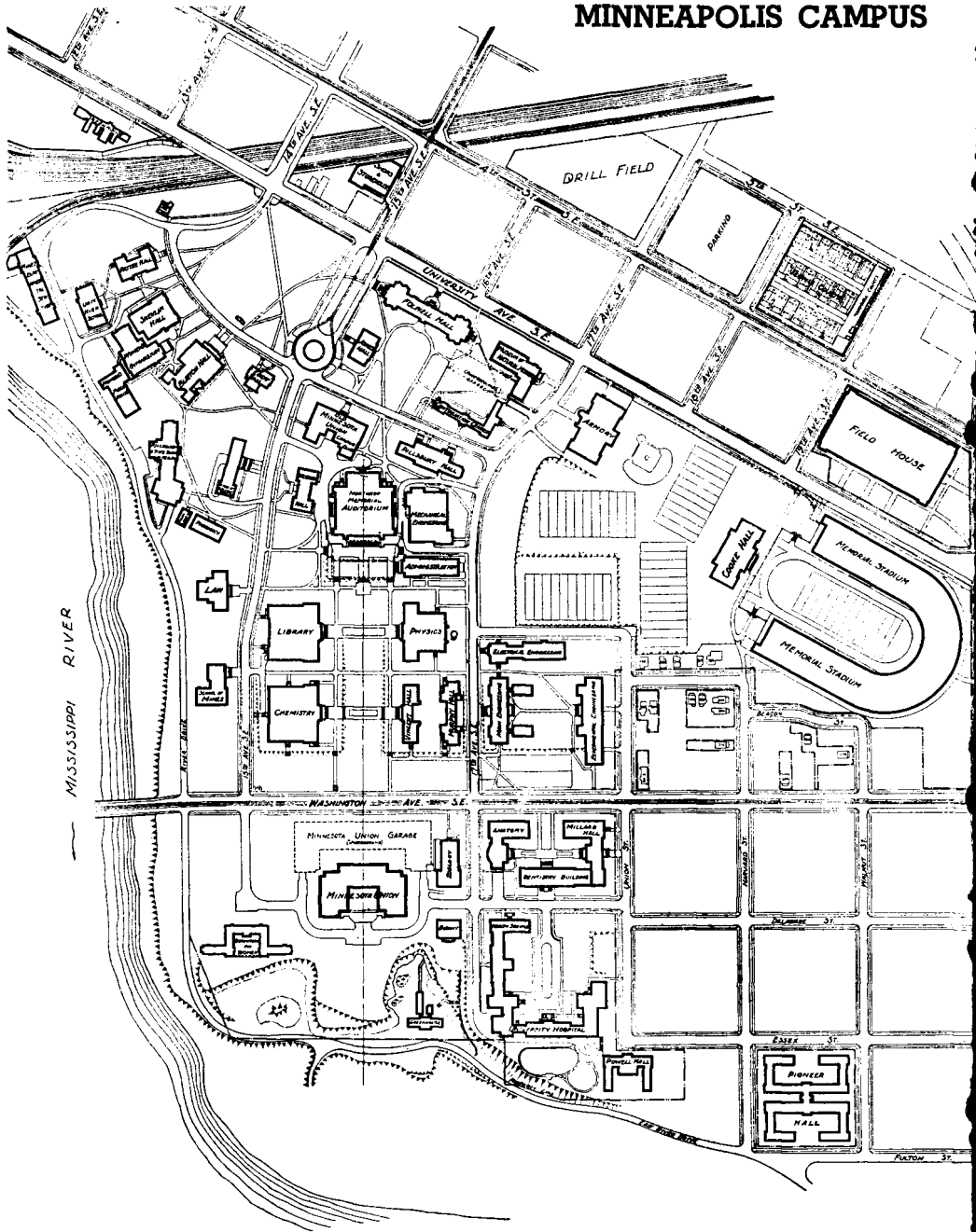


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March 10, 1948

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UNIVERSITY OF MINNESOTA MINNEAPOLIS CAMPUS



UNIVERSITY OF MINNESOTA

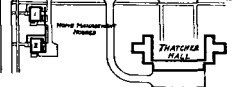
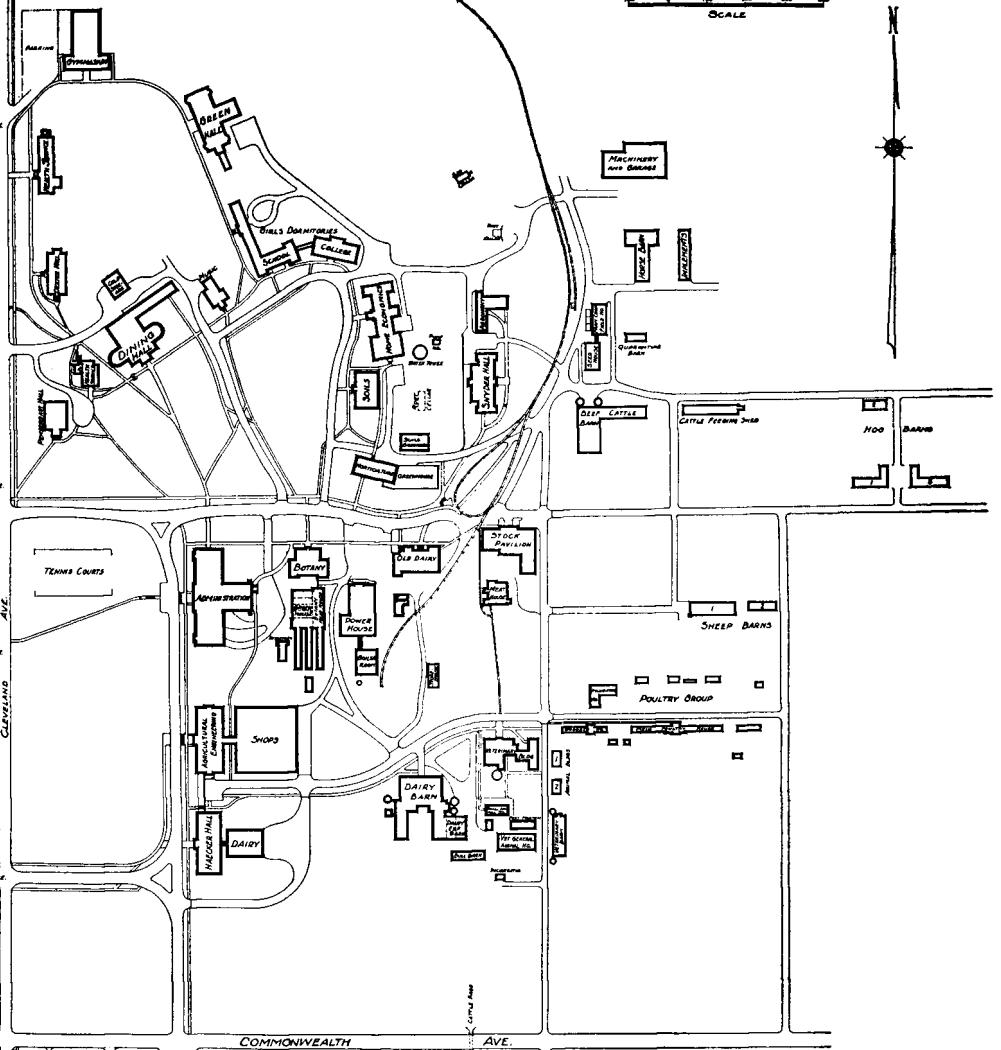
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SCALE



INTER-CITY COAL LINE



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CALENDAR
OF
THE 56TH SUMMER SESSION, 1948
(Except Library Instruction)

June	14	Monday	Registration, first term
June	15	Tuesday	Registration, first term
June	16	Wednesday	First term classes begin
July	5	Monday	Holiday (Sunday, July 4, Independence Day)
July	22	Thursday	Commencement, 8:00 p.m.
July	23	Friday	First term closes
July	26	Monday	Registration and payment of fees for second term close at 4:00 p.m.
July	27	Tuesday	Second term classes begin
August	26	Thursday	Commencement, 8:00 p.m.
August	28	Saturday	Second term closes

LIBRARY INSTRUCTION
(Eight-week course)

June	14	Monday	Registration
June	15	Tuesday	Registration
June	16	Wednesday	Term begins
July	5	Monday	Holiday (Sunday, July 4, Independence Day)
August	6	Friday	Term closes

CLASS HOUR SCHEDULE

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

Convocation, IV hour, Thursday
(See Official Daily Bulletin for announcements)

No application form need be filed by students with previous college work who plan to attend during the 1948 Summer Session only. See pages 12 and 13 for further details.

KEY TO ABBREVIATIONS USED FOR BUILDINGS

- A**, Armory
Ad, Administration, University Farm
Adm, Administration
Ag, Agronomy, University Farm
AgrBot, Agricultural Botany, University Farm
AH, Appleby Hall
BB, Bull Barn, University Farm
BCB, Beef Cattle Barn, University Farm
BeH, Berry House, University Farm
BFH, Botany Field House, University Farm
Bo, Botany
BoG, Botany Greenhouse
Bot, Botany, University Farm
BrH, Brewster Hall, University Farm
Bu, Burton Hall
C, Chemistry Building
CCS, Center for Continuation Study
CH, Cooke Hall
CMU, Coffman Memorial Union
CoH, Ada Comstock Hall
CS, Carpenter Shop, University Farm
CSP, Cold Storage Plant, University Farm
CSt, Center, Livestock Pavilion
CSS, Corn Seed Stocks, University Farm
CWI, Child Welfare Institute
DCB, Dairy Cattle Barn, University Farm
DeH, Dexter Hall, University Farm
DH, Dining Hall, University Farm
DHD, Dining Hall Dormitory, University Farm
E, Main Engineering
EdH, Eddy Hall
EE, Electrical Engineering
En, Engineering Building, University Farm
Ex, Experimental Engineering
F, Folwell Hall
FCFH, Farm Crops Field House, University Farm
FdH, Field House
G, Greenhouse (13th and University Ave. S.E.)
GH, Green Hall, University Farm
Gy, Gymnasium, University Farm
HB, Horse Barn, University Farm
HE, Home Economics, University Farm
HH, Haecker Hall, University Farm
HL, Hydraulic Laboratory, Hennepin Island
HoB, Home Building, University Farm
Hospitals
 CI, Cancer Institute
 EH, Eustis Hospital
 EMH, Elliot Memorial Hospital
 HS, Health Service
 PW, Psychiatric Ward
 TM, Todd Memorial Hospital
 UD, University Dispensary
HP, Heating Plant
Hr, Horticulture, University Farm
HS, Health Service, University Farm
IA, Institute of Anatomy
J, Jones Hall
L, Law Building
Lib, Library Building
MB, Music Building, University Farm
ME, Mechanical Engineering
MeH, Meredith Hall, University Farm
MeS, Medical Sciences
MEx, Mines Experiment Station
MH, Millard Hall
MNH, Museum of Natural History
MS, Machinery Shop, University Farm
MSh, Meat Shop, University Farm
Mu, Music Building
MurH, William J. Murphy Hall
NGW, Norris Gymnasium for Women
NH, Nicholson Hall
NMA, Northrop Memorial Auditorium
OD, Old Dairy, University Farm
OSL, Oak Street Laboratories
P, Pillsbury Hall
Pe, Pendergast Hall, University Farm
PG, Poultry Group, University Farm
Ph, Physics
PH, Power House, University Farm
PiH, Pioneer Hall
PoH, Louise M. Powell Hall
PP, Plant Pathology, University Farm
Psy, Psychology
Pt, Pattee Hall
SaH, Sanford Hall

SB, Swine Barn, University Farm
SBH, State Board of Health
SH, Seed House, University Farm
ShH, Shevlin Hall
SnH, Snyder Hall, University Farm
So, Soils, University Farm
SS, Storehouse and Shops
St, Livestock Pavilion, University Farm
Stad, Stadium
Stor, Storehouse, Oak and University
TCH, Temporary, Court of Hospital
TEH, Temporary, East of Haecker Hall,
University Farm
TH, Thatcher Hall, University Farm
TNCE, Temporary, North Court of
Engineering
TNHS, Temporary, North of Health
Service
TNL, Temporary, North of Library
TNM, Temporary, North of Mines (AH)
TNUH, Temporary, North of Univer-
sity High School
TSA, Temporary, South of Administra-
tion, University Farm

TSB, Temporary, South of Botany
TSCE, Temporary, South Court of Engi-
neering
TSE, Temporary, South of Engineering
TSF, Temporary, South of Folwell
TSH, Temporary, South of Haecker
Hall, University Farm
TSMa, First Temporary, South of Mines
(AH)
TSMb, Second Temporary, South of
Mines (AH)
TSMc, Third Temporary, South of
Mines (AH)
TSP, Temporary, South of Powell Hall
TSV, Temporary, South of Vincent Hall
UHS, University High School
VB, Veterinary Barn, University Farm
Ve, Veterinary, University Farm
VH, Vincent Hall
WeH, Wesbrook Hall
WeiH, Weigley House, University Farm
WuH, Wulling Hall
Z, Zoology Building

REGISTRATION TALLY PROCEDURE

JUNE 14 AND 15

Students registering in the College of Agriculture, Forestry, and Home Economics, or the School of Veterinary Medicine, will report to Room 203d Administration Building, St. Paul Campus, for registration materials and instructions.

Other students will report to the east entrance of the Field House, Minneapolis Campus, for materials. New freshman students, or others without previous college work, who do not have an admission certificate should go to the admissions table to the left of the entrance. All registrants are expected to be familiar with the section of this bulletin dealing with "Admission and Registration," beginning on page 12.

Students registering before or after the regular registration period, June 14 and 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 in which class sizes are limited or "controlled." To tally, the student obtains an IBM class reservation card for each of the controlled classes for which he is registering. A manual tally, for which reservation cards are not issued, is maintained for courses tallied at 136 Main Engineering.

Courses controlled and places where they are tallied are listed below:

AGRICULTURE, FORESTRY, AND HOME ECONOMICS

All courses controlled and tallied at 203dAdm., St. Paul Campus

BUSINESS ADMINISTRATION

All courses are controlled except:

Business Administration 183

Economics 32, 39

Controlled courses tallied at 106VH*

EDUCATION

Courses listed are controlled:

Agricultural Education, all courses tallied at 203dAdm., St. Paul Campus

Home Economics Education, all courses tallied at 203dAdm., St. Paul Campus

Industrial Education 6, 7, 10, 12, 15, 20 tallied at 204Bu*

GENERAL COLLEGE

All courses are controlled and tallied at 108 WeH*

INSTITUTE OF TECHNOLOGY

All courses are controlled and tallied at 136E with following exceptions:

Chemistry

Inorganic 1, 2, 4, 5, 11 (Sec. 1b) tallied at 106F*

Analytical 7 tallied at 106F*

Organic 61 (Sec. 1b), 62 (Sec. 1b) tallied at 106F*

Physical 107a, 107b tallied at 106F*

MEDICAL SCHOOL

Courses listed are controlled and tallied at 106F* Bacteriology 53

SCIENCE, LITERATURE, AND THE ARTS

Courses listed are controlled and tallied at 106F* unless otherwise indicated:

Art 4, 5, 20, 21, 22, 30, 31, 32, 33, 34, 35, 43, 44, 53, 54, 60, 61, 62, 63, 64, 65, 70, 71, 72, 73, 74, 75, 80, 81, 82, 150, 151, 152, 163, 164, 165, 173, 174, 175

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Physics A, 1, 1a, 2, 2a, 4, 6, 110, 134, 136, 144

Physics 7, 9 tallied at 136E

Psychology 4, 5, 119, 125, 126, 130, 135, 136, 154, 171, 172

Speech 32, 33, 34, 65, 66, 67, 81, 82, 92, 106, 111, 112, 122, 125, 127, 141, 151, 153, 162, 163, 164, 165, 166

Zoology 1, 22

* These courses will be tallied in the Field House, Minneapolis Campus, on the regular registration days, June 14 and 15.

SUMMER SESSION

The University of Minnesota has planned the 1948 Summer Session to meet the special needs of veterans, undergraduate students, public school workers, and graduate students working toward advanced degrees. Two summer terms have been scheduled, and a full quarter of university work may be completed in the combined sessions through a selection from the many courses offered this year. Comprehensive offerings have been arranged for both graduate and undergraduate students in the academic and the professional fields.

Two special programs will be offered, one on the Scandinavian Area Studies (see below) and the other a continuation of the special courses of the Program in American Studies (see page 10).

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

DULUTH BRANCH

On July 1, 1947, the Duluth State Teachers College became the Duluth Branch of the University of Minnesota. Summer Session dates for the Duluth Branch are the same as for the University of Minnesota in the Twin Cities. Summer Session curricula include preprofessional, teacher education, and four-year academic programs. For bulletin and detailed information, write to the University of Minnesota, Duluth Branch, Duluth, Minnesota.

SCANDINAVIAN AREA STUDIES

In the fall term of 1947, the University of Minnesota began an enlarged program of study of the Scandinavian countries. For undergraduates, a major in Scandinavian Area Studies is open under the conditions described in the special *Bulletin of International Relations and Area Studies*. In the Graduate School, the Committee for Scandinavian Area Studies offers advanced work on a broad and inclusive "area and language" basis. The work includes courses, special lectures, and seminars in the history, the social, economic, and political institutions, and the arts, languages, and literature of the Scandinavian countries, with the student concentrating much of his work in the field of his special interest. Particular attention will be given to recent developments in the Scandinavian countries and to the place of those countries in the world today. Students in this program may work for the Master's or Doctor's degree (for the latter only in conjunction with training in one of the usual disciplines) or, if an academic degree is not wanted, for a certificate of achievement. The program is designed to meet the needs of students interested in careers in public service, journalism, and foreign commerce and business, as well as of those preparing for scholarship and teaching.

A grant received from the Carnegie Corporation of New York makes it possible to offer a limited number of fellowships to properly qualified graduate students. Fellowships may be renewed for subsequent years whenever this seems desirable in the judgment of the directing committee.

Prerequisite for admission to the program will be the equivalent of an undergraduate major sequence in any of the social sciences (history, political science, economics, sociology, geography, cultural anthropology) or the humanities (language, literature, philosophy, art). If a working knowledge of at least one of the Scandinavian languages is not demonstrated on admission, it must be attained in the course of study. In awarding the fellowships, weight will be laid on the ability and promise of the candidate rather than on any rigid program of preliminary study.

In addition to the graduate fellowships, two scholarships will be available for promising undergraduates who wish to prepare themselves for the graduate program.

Application blanks and additional information may be obtained from the Committee for Scandinavian Area Studies, 123 Temporary South of Folwell, University of Minnesota, Minneapolis 14, Minnesota.

For course listings see page 53.

AMERICAN STUDIES

The Program in American Studies, inaugurated in the 1946 Summer Session with a distinguished staff of visiting and resident professors, will continue in 1948 and, it is expected, each summer thereafter. The purpose of the program is to guide students to a broad knowledge of the culture of their own nation, as preparation for enlightened citizenship both in the United States and in the world. The topic for 1948 is Foreign-American Cultural Relations.

Numerous American courses already established by the Departments of Anthropology, Art, Economics, English, Geography, History, History of Education, Humanities, Journalism, Music, Philosophy, Political Science, and Sociology will be offered in 1948 by our own faculty and by guest professors. Among the latter will be Joseph L. Blau (Columbia University) and Michael Kraus (College of the City of New York).

In addition, the following new courses in American Studies will be given for the first time during the summer of 1948:

- | | |
|----------------|--|
| English 134 | The Origins of American Naturalism. Mr. Bernard Bowron (Minnesota) |
| History 134 | Anglo-American Cultural Relations to 1800. Mr. Michael Kraus (College of the City of New York) |
| History 149 | History of Historical Writing in America. Mr. Michael Kraus (College of the City of New York) |
| Philosophy 120 | The Influence of European Philosophy upon American Thought. Mr. Joseph L. Blau (Columbia University) |

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

GENERAL INFORMATION

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

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

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

Particular attention is called to the advantages of study in the second term when classes are smaller and more intimate. Students registering in the second term who are

teachers and are obliged to return to their schools before the close of the term may 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 well in advance the courses in which the permission will be granted. They may then make a program accordingly.

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

INTERCAMPUS CAR

For students who are registered for class work on both the 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 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 Meredith Hall 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.

GENERAL OFFICES

The office of the dean of the Summer Session is in Room 419 Administration Building on the Minneapolis Campus. The offices of Admissions and Records and the bursar are on the first floor of the Administration Building. For the convenience of students registering in agriculture and home economics, branch offices are established on the second floor of the Administration Building, St. Paul Campus. The several schools and colleges function in the control of students during the summer just as during any other quarter of the year. Students in one college are free to elect courses in another college, however, on approval of the dean of the college in which the student is registered.

UNIVERSITY LIBRARY

The University Library is open to all students of the Summer Session. The library of the Department of Agriculture is located in the Administration Building on the 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.

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

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

UNIVERSITY POST OFFICE

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

OFFICIAL DAILY BULLETIN

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

STUDENTS' HEALTH SERVICE

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

HOUSING AND FOOD SERVICE

Living Expenses—The living expenses for students at the University are never very high, and this is true especially of the Summer Session. Good accommodations for rooms may be had from \$15 to \$25 per month. In addition to the cafeterias conducted on the campus by the University, several good restaurants are to be found in the immediate vicinity of the University. Further information concerning room and board may be obtained by addressing the Director of Student Housing, 202 Eddy Hall, University of Minnesota, Minneapolis 14. It is generally more satisfactory to engage accommodations after arrival than to make reservations in advance, except in the case of reservations at Comstock Hall, Sanford Hall (first term), the Cooperative Village, and Pioneer Hall on the Minneapolis Campus and Meredith Hall on the St. Paul Campus.

ADMISSION AND REGISTRATION

ADMISSION

The courses of the Summer Session are open to all qualified high school graduates, persons now regularly admitted to the University including those attending regular session, and persons with previous college work. Students with previous college work who wish to attend for the Summer Session only and who are not candidates for degrees during the Summer Session may do so without filing credentials, provided the applicants are in good standing. Such students will be classified as special students for the Summer Session only. Special students who wish to be considered for admission to a subsequent term must file regular admission applications early in the summer.

Any student who expects to become a candidate for a degree at the University during either summer term must file, with the Office of Admissions and Records, an application for admission and an official transcript of credits covering high school and previous college work. This in no way sets aside the general university regulations specifying the residency requirements for degrees.

Students who have had no previous college work must satisfy admission requirements for the college desired. Exceptions may be granted in certain cases for persons of maturity (generally over twenty-four years of age) whose preparation does not meet the requirements of Summer Session. They may attend as adult special students, subject to the approval of the dean of the college or school concerned. Non-high school graduates and others who do not meet normal requirements may be considered by examination.

Attendance during the Summer Session in no way admits to the regular academic year nor does it establish any claim to consideration of undergraduates for admission to any college of the University during any subsequent term in the regular academic year, except in certain cases of readmission. Admission or readmission in the regular academic year is subject to the current nonresidency restrictions which are not effective in Summer Session.

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

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

NONRESIDENT REGULATIONS FOR THE ACADEMIC YEAR†

Admission

By action of the Board of Regents, taken because of the present educational emergency, admission of nonresidents to the regular session is restricted. Rules in effect at the date of this publication make exceptions for veterans whose homes are in a defined area (Wisconsin, northern Michigan, Iowa, North Dakota, South Dakota, and Montana) economically and educationally related to Minnesota and who are in the upper 25 per cent of their high school graduating classes, or who have an average of "B" or better if they are applying for admission with advanced standing.

Nonveterans in the same area, to be considered, must be in the upper 10 per cent of their graduating class or present a "B" average if applying for admission with advanced standing. Sons and daughters of former students are also eligible for consideration. Other minor exceptions have been established covering a few individual circumstances.

Readmission

Nonresidents whose educational programs have been interrupted and who formerly attended here as regular students are eligible for readmission in the academic year only if they had "C" averages during their previous university attendance. Nonresidents whose previous records at Minnesota were below "C" may not re-enter.

REGISTRATION

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

The regular registration days are:

For the first term	Monday, June 14, 8:00 a.m. to 4:00 p.m.
	Tuesday, June 15, 8:00 a.m. to 4:00 p.m.
For the second term	Monday, July 26, 8:00 a.m. to 4:00 p.m.

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

Wednesday, June 16	\$2.00
Thursday, June 17	3.00
Friday, June 18	4.00
Monday, June 21	5.00

No registrations are allowed for the first term after Monday, June 21, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

† Not applicable to Summer Session.

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

Tuesday, July 27	\$2.00
Wednesday, July 28	3.00
Thursday, July 29	4.00
Friday, July 30	5.00

No registrations will be accepted for the second term later than Friday, July 30, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

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

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

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

CHANGES IN REGISTRATION

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

FEEs

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

Tuition fee (per term)	\$30.00
Incidental fee‡ (per term)	6.00
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Total fee (per term)	\$36.00
General deposit	\$ 2.00
Forestry fees:	
Dormitory and dining hall at Itasca Forest and Biological Station (first term)	\$ 5.00

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

Part-time tuition fee (4 credits or less) (per term)	\$20.00
Incidental fee‡ (per term)	6.00
<hr/>	
Total fee (per term)	\$26.00
General deposit	\$ 2.00

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

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

‡ An incidental fee of \$6 per term is charged each student for which the student receives the privileges of the Coffman Memorial Union, the Health Service, Library, Counseling Bureau, Speech Clinic, Recreation, and the university post-office service.

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

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

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

For fees for students in the Medical School, see pages 88 and 89.

For fees for students in the School of Dentistry, see page 105.

For fees for students in the Law School, see page 87.

For fees for students registered for music courses, see pages 40-42.

For fees for students registered for nursing courses, see page 102.

For fees for students registered for veterinary medicine, see page 82.

Refund of Fees

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

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

AUDITORS

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

CREDIT

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

AMOUNT OF WORK

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

EXAMINATIONS

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

GRADING SYSTEM

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

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

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

REGULATIONS GOVERNING GRANTING OF DEGREES

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

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

2. **Recommendation of the faculty.**

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

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

5. **Attendance at commencement**—All candidates for degrees are required to be present at commencement exercises provided the candidate's work is completed at the end of a quarter when such exercises are held. Commencement exercises for Summer Session candidates in the first term will be held Thursday, July 22, 1948, and for second term Summer Session candidates, will be held Thursday, August 26, 1948.

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

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

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

Institute of Technology	\$10.00
College of Education (except Nursing Education)	4.50

EXPLANATIONS

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

Following each course is a statement, in parentheses, of credits, classes of students eligible, prerequisites, 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, 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 pages 5-7.

...master of science, and doctor of philosophy.

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

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

CANDIDACY FOR A DEGREE

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

Following the completion of from 9 to 15 graduate credits, at least 3 of which must be in the major, the student who expects to obtain a Master's degree should apply for admission to candidacy for that degree on a blank provided for the purpose. This application should be submitted as soon as a student has earned sufficient credits to be eligible 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 six weeks each. In this case, the candidate will be expected to register for thesis and to carry *in absentia* thesis work to complete the equivalent of three quarters. All requirements for the Master's degree under Plan A must be

completed within six years after the first registration, except in social work where the time limit is eight years.

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

Theses of Summer Session students must be completed and a minimum of four copies registered in the Graduate School office at least four weeks before the end of the term in which they take the degree (first term: Thursday, June 24, 1948; second term; Thursday, July 29, 1948).

MASTER'S DEGREE, PLAN B

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

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

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

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

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

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

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

GENERAL INFORMATION

For general information, for the requirements for admission as regular or as unclassified students, for general rules and regulations, and for the requirements for degrees in the different curricula offered by the college, students should consult one of the administrative officers or the *General Information Bulletin* and the complete bulletin of the College of Science, Literature, and the Arts. (See also page 12 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 18.)

AMERICAN STUDIES

FIRST TERM

- 21.‡ American Life I. (Same as Hum. 21.) The growth and the interrelation of nationalism, regionalism, and internationalism in American social thought, literature, and the fine arts, against a background of history. (3 cred.; all; no prereq.; II MTWThF; 110F.) Miss Turpie
120. The Influence of European Philosophy upon American Thought. (Same as Phil. 120.) (3 cred.; jr., sr., grad.; no prereq.; II MTWThF; 2F.) Mr. Blau

SECOND TERM

22. American Life II. (Same as Hum. 22.) The growth and interrelation of individualism and democracy, with particular attention to the status of minorities. (3 cred.; all; no prereq.; II MTWThF; 110F.) Ar.
134. Anglo-American Cultural Relations to 1800. (Same as Hist. 134.) (3 cred.; jr., sr., grad.; no prereq.; III MTWThF; 201WuH.) Mr. Kraus
149. History of Historical Writing in America. (Same as Hist. 149.) (3 cred.; jr., sr., grad.; no prereq.; IV MTWThF; 112Bu.) Mr. Kraus

ANTHROPOLOGY

FIRST TERM

40. Introduction to Anthropology. Man's physical and cultural development; the nature and significance of race differences; ways of life in primitive society; applications of anthropology to modern life. (3 cred.; soph., jr., sr.; no prereq.; II MTWThF; 306AH.) Mr. Winchester

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

80. The American Indian. A survey of native cultures of the new world. Physical and cultural characteristics. (3 cred.; jr., sr.; no prereq.; I MTWThF; 106TSMc.) Mr. Essene
- 123.* Problems in Anthropology. Individually directed readings. (Cred. ar.; jr., sr., grad.; prereq. permission of instructor; ar.; ar.) Mr. Essene
- 169*. Peoples of the South Seas. A survey of the native cultures of the Pacific Islands. (3 cred.; jr., sr., grad.; no prereq.; II MTWThF; 106TSMc.) Mr. Essene

SECOND TERM

42. The Growth of Cultures. Man's first appearance in old and new worlds; earliest stages in the development of civilization; discovery and invention, the formation of cultural patterns, and the spread and adaptation of culture to various environments in Asia, Africa, the South Seas, and among the American Indians; changes in arts, beliefs, and institutions of primitive communities as observed in recent times. (3 cred.; soph., jr., sr.; no prereq.; I MTWThF; 106TSMc.) Mr. Spencer
- 109.* General Linguistics. Discussion of problems relating to the phonetic patterning, morphology, syntax, and semantics of language. Special attention will be directed to the varieties of language structures found outside our own speech family. (3 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language; II MTWThF; 106TSMc.) Mr. Spencer
- 124.* Problems in Anthropology. Individually directed readings. (Cred. ar.; jr., sr., grad.; prereq. permission of instructor; ar.; ar.) Mr. Spencer

SUMMER SESSION

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

ART

NOTE—The new Department of Art offers courses formerly given in the Department of Fine Arts (SLA), the Department of Art Education, and the Institute of Technology. A new course-numbering system is here adopted for the first time. To prevent confusion in the present catalog, the former course numbering is given in each case opposite the new number. The symbols ArtEd. signify Art Education, F.A. Fine Arts, D.P. Drawing and Painting (from School of Architecture) and Drawing (from the Institute of Technology).

FIRST TERM

HISTORY OF ART

- Art1.‡ (F.A. 1) Introduction to Modern Art. An introductory course emphasizing the various problems involved in the first approaches to objects of art, whether painting, sculpture, or architecture. Most of the discussion will revolve around European and American art of the nineteenth and twentieth centuries, but examples will be drawn from other periods to illustrate particular problems and principles. (3 cred.; no prereq.; III MTWThF and 1 hr. ar.; NHAud.) Mr. Tselos
- Art107. (F.A. 142) Art in Greece and Rome. (3 cred.; jr., sr., grad.; prereq. Art 1,2,3, or consent of instructor; IV MTWThF; 3MNH.) Mr. Arnason
- Art146. (F.A. 109) Art in the United States. (3 cred.; jr., sr., grad.; prereq. Art 1,2,3, or consent of instructor; II MTWThF; 3MNH.) Mr. Tselos

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

DRAWING AND PAINTING

- Art20.‡ (D.P. I, ArtEd. 4) Drawing and Painting I. Studies in correct expression dealing with simple composition in line, form, and color. Introduction to materials and techniques. (2 cred.; no prereq.; ar.; 417E.) Mr. Sabean
- Art30,31,32. (Drawing 41,42,43) Technical Drawing. General course in the theory and practice of freehand drawing. Perspective, sketching, rendering, lettering, and industrial drawing. Modification of this course of particular interest to dental, medical, and scientific students. (No cred. for Technology students; 2 cred. per course for others; no prereq. for Course 30; 6 lab. hrs. per week; hrs. ar.; 260TNL.) Mr. Doseff
- Art60,‡61‡,62‡ (D.P. II, ArtEd. 24A, 24B, 24C, 28A, 28B, 28C) Drawing and Painting II. Advanced drawing, water color, gouache. (2 cred.; prereq. 22, or equiv.; or consent of instructor)
- Sec. 1, V-VI MTWF, 207bJ, Mr. Quirt Sec. 2, ar., 417E, Mr. Sabean
- Art70,‡71,‡72.‡ (D.P. III, 26A, 26B, 26C, and ArtEd. 61,62,63, and Drawing 81,82,83) Oil Painting. Advanced problems in drawing and design. (2 cred.; prereq. 12 cred. in drawing and painting or equiv., or consent of instructor.)
- Sec. 1, III-IV MTWF, 207bJ Mr. Quirt Sec. 3, ar., 260TNL, Mr. Doseff
Sec. 2, III-IV MTWF, 417E, Mr. Booth
- Art80,‡81,‡82.‡ (D.P. IV) Drawing and Painting IV. Figure, portrait, landscape. (2 cred.; prereq. 72 or equiv. or consent of instructor; hrs. ar.; ar.) Mr. Booth, Mr. Doseff
- Art150,‡151,‡152.‡ (D.P. V and ArtEd. 124E) Drawing and Painting V. Special problems. (Cred. ar.; grad.; hrs. ar.; 207bJ, 417E.) Mr. Quirt, Mr. Booth

DESIGN

- Art4.‡ (ArtEd. 1) General Design. Problems in art structure emphasizing the use of line, texture, area, and color. Skills basic to work in pictorial composition, crafts, photography, interior design, and commercial art. (3 cred.; no prereq.; III-IV MTWF, III Th; 104J.) Mr. Torbert
- Art53.‡ (ArtEd. 51) Industrial Design I. (3 cred.; prereq. 6 cred. general design and 2 cred. drawing or equiv. or consent of instructor; hrs. ar.; 104J.) Mr. Wigglin.

SCULPTURE AND CRAFTS

- Art43.‡‡ (ArtEd. 33) General Handcrafts. Problems in materials, three dimensional design. (3 cred.; no prereq.; III-IV MTWF, III Th; 2J.) Ar.
- Art83,‡‡84,‡‡85.‡‡ (ArtEd. 70A,B,C) Sculpture II. Carving. (3 cred.; prereq. consent of instructor; III-IV MTWF, III Th; 11J.) Mr. Lupori
- Art93,‡‡94,‡‡95.‡‡ (ArtEd. 73A,B,C) Ceramics I. (3 cred.; prereq. consent of instructor; I-II MTWThF; 10J.) Mr. Lupori
- Art183,‡‡184,‡‡185.‡‡ (ArtEd. 170E) Sculpture III. Special problems. (Cred. ar.; grad.; prereq. consent of instructor; hrs. ar.; ar.) Mr. Lupori
- Art193,‡‡194,‡‡195.‡‡ (ArtEd. 173E) Ceramics II. (Cred. ar.; grad.; prereq. consent of instructor; hrs. ar.; ar.) Mr. Lupori

SECOND TERM

HISTORY OF ART

- Art3. (F.A. 3) Introduction to Renaissance and Baroque Art. (3 cred.; no prereq.; III MTWThF; MNH Aud.) Ar.

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

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

- Art108. (F.A.153) The Art of the Great Cathedrals. (3 cred.; jr., sr., grad.; prereq. Art 1,2,3, or consent of instructor; II MTWThF; 3MNH.) Ar.
- Art117. (F.A.155) Great Masters of the High Renaissance. (3 cred.; jr., sr., grad.; prereq. Art 1,2,3, or consent of instructor; IV MTWThF; 3MNH.) Ar.

DRAWING AND PAINTING

- Art20,†21,‡22. (D.P. I, ArtEd. 4,6,8) Drawing and Painting I. (2 cred.; no prereq.; hrs. ar.; 417E.) Mr. Sabean
- Art30,31,32. (Drawing 41,42,43) Technical Drawing. (2 cred.; no prereq.; hrs. ar.; 260TNL.) Mr. Doseff
- Art60,†61,‡62.† (D.P. II, ArtEd. 24A,B,C, ArtEd. 28A,B,C) Drawing and Painting II. Advanced drawing and water color, gouache. (2 cred.; prereq. 22 or equiv. or consent of instructor; hrs. ar.; 417E.) Mr. Sabean
- Art70,†71,‡72.† (D.P. III, ArtEd. 26A,B,C, ArtEd. 61,62,63, and Drawing 81,82,83) Drawing and Painting III. Oil Painting. Advanced problems in drawing and design. (2 cred.; prereq. 12 cred. in drawing and painting or equiv. or consent of instructor)
- Sec. 1, III-IV MTWF, 207bJ, Mr. Morris Sec. 2, ar., 260TNL, Mr. Doseff
- Art80,†81,‡82.† (D.P. IV) Drawing and Painting IV. Figure, portrait, landscape. (2 cred.; prereq. 72 or equiv. or consent of instructor)
- Sec. 1, I-II MTWF, 207bJ, Mr. Morris Sec. 2, ar., 260TNL, Mr. Doseff
- Art150,†151,‡152.† (D.P. V, ArtEd. 124E) Drawing and Painting V. Special Problems (Cred. to be ar.; grad.; hrs. ar.; ar.) Mr. Morris

DESIGN

- Art5.† (ArtEd. 2) General Design. (3 cred.; prereq. Art 4, equiv., or consent of instructor; II-III MTWThF; 104J.) Mr. Torbert
- Art54.† (ArtEd. 52A) Interior Design. (3 cred.; prereq. 6 cred. general design and 2 cred. drawing, or equiv. or consent of instructor; III-IV MTWThF; 104J.) Mr. Torbert

SCULPTURE AND CRAFTS

- Art33,††34,††35.†† (Modeling, Grade I) Sculpture I. (2 cred.; no prereq.; ar.; 417E.) Mr. Sabean
- Art44.†† (ArtEd. 34) General Crafts. (3 cred.; no prereq.; I-II MTWThF; 11J.) Ar.
- Art83,††84,††85.†† (Modeling, Grade II,III, ArtEd. 73A,B,C) Sculpture II. (2 cred.; prereq. Sculpture I, equiv., or consent of instructor; hrs. ar.; 11J.) Ar.

ASTRONOMY

FIRST TERM

11. Descriptive Astronomy. (5 cred.; all; no prereq.; III-IV MTWF and one evening a week for observation; 133Ph.) Mr. 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.) Mr. Luyten
140. Least Squares. (3 cred.; prereq. 51 or 11, and at least Math. 51; ar.) Mr. Luyten

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

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

SECOND TERM

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

BOTANY

FIRST TERM

- 4.‡‡ General Botany. A survey lecture and laboratory course on plants and their human interest; characteristics of living matter; fundamental facts of growth, structure, and reproduction of plants; principles underlying inheritance, variation, organic evolution, and relations to environment. (5 cred.; all; no prereq.; lect., I MTWThF, 06Bo.; lab., II-III MTWThF, 4, 5Bo.) Mr. Banks
6. Field Botany. (Given only at the Biological Station Itasca Park for Foresters.)
- 51.‡‡‡ General Plant Physiology. Introductory study of plant physiology. Emphasis on fundamental principles requisite to understanding physiological phenomena encountered in higher land plants. Cellular physiology, enzymes, respiration, photosynthesis, mineral nutrition, water and solute metabolism, hormones, tropisms, physiological ecology. (3 cred.; jr., sr.; prereq. 1-2-3 or 4-5 and one quarter of general chemistry; lect., VI MWF, 06Bo.; lab., VII-VIII MWF, 104Bo.) Mr. Brown
- 121.‡‡‡ Developmental Anatomy. The microscopic structure of vascular plants with particular attention to development in the root, stem, and leaf. (5 cred.; jr., sr., grad.; prereq. 1-2-3 or 4-5; II-III-IV MTWThF; 209Bo.) Mr. Abbe
140. Advanced Survey of Plant Physiology. Advanced study of major topics in plant physiology. Cell physiology including: membrane phenomena, enzyme catalysis, respiration, fermentation, and photosynthesis; mineral nutrition; water metabolism; translocation of solutes; hormones; tropisms. (3 cred.; jr., sr., grad.; prereq. 51 or equiv. and an elem. course in organic chem. or biochem. or consent of instructor; III MWF; 110Bo.) Mr. Brown
- 197.*‡‡‡ Problems. Advanced work in some specialized field of botany. (1-5 cred.; jr., sr.; prereq. consent of instructor; ar.; ar.) Ar.

SECOND TERM

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

For additional courses see Itasca Park Biological Station, page 83.

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

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

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

CLASSICS

FIRST TERM

Course for Which No Knowledge of Greek or Latin Is Required

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

GREEK

- 171.* Independent Reading Course. (3 cred.; jr., sr., grad.; prereq. consent of instructor; II MTWThF; 115F.) Mr. Swanson

LATIN

- 171.* Independent Reading Course. (3 cred.; jr., sr., grad.; prereq. consent of instructor; II MTWThF; 115F.) Mr. Swanson
 221.* Graduate Seminar: Lyric Poetry—Catullus. (3 cred.; grad.; prereq. consent of instructor; III MTWThF; 115F.) Mr. Heller

SECOND TERM

Courses for Which No Knowledge of Greek or Latin Is Required

- 24.† Technical Terms of Science, Medicine, and the Humanities. Presentation in vivid English contexts of Greek and Latin prefixes, suffixes, and root words basic in modern technical vocabularies. (3 cred.; soph., jr., sr.; no prereq.; III MTWThF; 115F.) Mr. Swanson
 31-32.† Greek and Latin Drama. Representative tragedies and comedies of the Greek and Latin dramatists are read and discussed. Lectures on the origin and development of the ancient drama and its relation to modern drama. (3 cred.; soph., jr., sr.; no prereq.; IV MTWThF; 114F.) Mr. Walton

GREEK

- 172.* Independent Reading Course. (Same as Course 171, first term, but different authors will be read and discussed.) (3 cred.; jr., sr., grad.; prereq. consent of instructor; II MTWThF; 115F.) Mr. Walton

LATIN

- 172.* Independent Reading Course. (Same as Course 171, first term, but different authors will be read and discussed.) (3 cred.; jr., sr., grad.; prereq. consent of instructor; II MTWThF; 115F.) Mr. Walton

COMMUNICATION

See General Studies, pages 28 and 30.

DANISH

See Scandinavian Area Studies, page 53.

ECONOMICS

See School of Business Administration, page 129,
 and Agricultural Economics, page 77.

† Credit will be allowed in either Classics or English.

ENGLISH‡
FIRST TERM
LITERATURE

22. Introduction to Literature. Dryden, Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding, and Sheridan. (6 cred.; all; prereq. †; II and IV MTWThF; 303F.) Mr. Hessler
38. Twentieth-Century Literature. Poetry and drama. This course, as a general introduction to the intelligent reading of literature, is intended for all students in all colleges, and not particularly for those meaning to specialize in English. (3 cred.; all; prereq. †; III MTWThF; 204F.) Mr. Hulme
55. Shakespeare. *A Midsummer Night's Dream, The Merchant of Venice, Much Ado about Nothing, Twelfth Night, and The Tempest*. Assignment of other comedies for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq. §.)
Sec. 1, I MTWThF, 303F, Mr. Buckley Sec. 2, II MTWThF, 204F, Miss Christie
56. Shakespeare. *Henry IV*, parts 1 and 2, *Julius Caesar, Hamlet, and Macbeth*. Assignment of other historical plays for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq. §; I MTWThF; 204F.) Miss Christie
62. Milton. The minor poems, *Areopagitica, Paradise Lost, and Samson Agonistes*. (3 cred.; jr., sr.; prereq. 21-22 or 55-56; III MTWThF; 213F.) Mr. Dunn
74. American Literature. (3 cred.; jr., sr.; prereq. §; II MTWThF; 301F.) Mr. Smith
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. §; III MTWThF; 321F.) Mr. Clark
100. Old English. An introduction to the sounds and grammar with some prose reading. The relation to modern English is stressed. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; I MTWThF; 302F.) Mr. Clark
- 110.* Romantic Poets of the Early Nineteenth Century. Byron, Shelley, Keats, etc. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; IV MTWThF; 302F.) Miss Jackson.
113. The American Short Story. A historical examination of the American short story from the eighteenth century to the present. (3 cred.; jr., sr., grad.; prereq. 73-74; IV MTWThF; 321F.) Miss Turpie
120. The Interpretation of Poetry. A study of certain technical aspects of poetry in relation to poetic meaning. (3 cred.; jr., sr., grad.; prereq. 6 cred. in English literature above A-B-C; II MTWThF; 302F.) Mr. Unger
- 126.* English Drama, 1660-1730. The Restoration and the early eighteenth century; the heroic play, tragedy, comedy of manners, beginnings of sentimental comedy. (3 cred.; jr., sr., grad.; prereq. 6 cred. in English literature above A-B-C; III MTWThF; 303F.) Mr. Thaler
- 136.* Advanced Shakespeare. The work of the poet's maturity. Special attention to *Othello, King Lear, Antony and Cleopatra, Cymbeline, The Winter's Tale*. (3 cred.; jr., sr., grad.; prereq. 55-56; IV MTWThF; 304F.) Mr. Thaler
- 156.* The American Drama. Survey of American drama in the eighteenth and nineteenth centuries. (3 cred.; jr., sr., grad.; prereq. 73-74 or 126-127; II MTWThF; 304F.) Mr. Hornberger
165. Introduction to Modern English. The sounds and grammar, with some attention to syntax and vocabulary. Required of Education majors in English. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; I MTWThF; 304F.) Mr. Allen

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

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

¶ Credit will be allowed in English for Classics 24, 31-32, and 42-43.

174. American English. The development of a distinctive vocabulary and pronunciation of American English; differences between it and British English; dialects in the United States. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; III MTWThF; 302F.) Mr. Allen
- 175.* The History of English Verse. Origin, development, special qualities, etc., of important forms of verse: Old English alliterative verse, four-stressed couplet, ballad stanza, heroic couplet, blank verse, dactylic hexameter, sonnet. (3 cred.; jr., sr., grad.; prereq. 6 cred. in English literature above A-B-C; III MTWThF; 304F.) Miss Jackson
- 183.* The Poetry of T. S. Eliot. (3 cred.; jr., sr., grad.; prereq. 6 cred. in English literature above A-B-C; IV MTWThF; 110F.) Mr. Unger
- 197.* Seventeenth-Century Literature. (3 cred.; jr., sr., grad.; prereq. 6 cred. in English literature above A-B-C; IV MTWThF; 113F.) Mr. Dunn
- 277.* Seminar in American Realism, Mark Twain. (3 cred.; grad.; prereq. permission of instructor; VIII-IX MW; 304F.) Mr. Smith

COMPOSITION

Preparatory Composition. This course is required of all freshmen whose standings in the tests required of entering freshmen are very low. For such freshmen it is prerequisite for all college courses offered by the Departments of English and Speech. Upon notification by the English Department registration should be made through the Extension Division, Room 53, Nicholson Hall. A special fee of \$11.25 for the course must be paid by the student to the Extension Division at the time of registration. (No cred.; I MTWThF; ar.) Ar.

4. Freshman Composition. Practical training in the art of writing; the principles of structure, and analysis of specimens of good prose. This course carries university credit for the first quarter of Composition 4-5-6. (3 cred.; all; prereq. placement test)

Sec. 1, I MTWThF, 311½F, ar.
Sec. 2, II MTWThF, 311½F, ar.

Sec. 3, III MTWThF, 311½F, ar.

5. Freshman Composition. A continuation of Composition 4. This course carries university credit for the second quarter of Composition 4-5-6. (3 cred.; all; prereq. Comp. 4 or Communication 1)

Sec. 1, II MTWThF, 322F, ar.
Sec. 2, III MTWThF, 322F, ar.

Sec. 3, IV MTWThF, 322F, ar.

6. Freshman Composition. A continuation of Composition 5. This course carries university credit for the third quarter of Composition 4-5-6. (3 cred.; all; prereq. Comp. 4-5 or Communication 1-2)

Sec. 1, I MTWThF, 227F, ar.
Sec. 2, III MTWThF, 227F, ar.

Sec. 3, IV MTWThF, 227F, ar.

27. Advanced Writing. The writing of essays with emphasis on structure and organization. Instruction largely in individual conference. (3 cred.; all; prereq. †)

Sec. 1, II MTWThF, 205F, Mr. Buckley
Sec. 2, III MTWThF, 205F, ar.

Sec. 3, IV MTWThF, 205F, Mr. Hulme

28. Advanced Writing. Informal writing, involving description and narration. Instruction largely in individual conference. (3 cred.; all; prereq. †; II MTWThF; 316F.) Mr. Bellow

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

102. Seminar in Writing. 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.; sr., grad., but registration limited to 15 students; prereq. permission of instructor and for undergraduates 6 cred. above 50 in composition; IV MTWThF; 316F.) Mr. Bellow

SECOND TERM

LITERATURE

39. Twentieth-Century Literature. The novel since Thomas Hardy. This course, as a general introduction to the intelligent reading of literature, is intended for all students in all colleges, and not particularly for those meaning to specialize in English. (3 cred.; all; prereq. †; III MTWThF; 204F.) Mr. Cronin
55. Shakespeare. (See 55, first term.) (3 cred.; jr., sr.; prereq. §; I MTWThF; 204F.) Ar.
56. Shakespeare. (See 56, first term.) (3 cred.; jr., sr.; prereq. §)
- Sec. 1, II MTWThF, 321F, ar. Sec. 2, III MTWThF, 321F, ar.
73. American Literature. (3 cred.; jr., sr.; prereq. §; II MTWThF; 301F.) Mr. McDowell
- 106.* Eighteenth-Century Poetry. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; III MTWThF; 304F.) Mr. Hillhouse
- 118.* Nineteenth-Century Prose. The literature of social criticism—Carlyle, Ruskin, Arnold, and others. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50 or permission of instructor; II MTWThF; 304F.) Mr. Mineka
- 129.* Modern Drama, 1880 to the Present. A survey of the chief dramatists, English, American, and Continental, from the time of Ibsen. (3 cred.; jr., sr., grad.; prereq. 55-56 or 126-127; IV MTWThF; 304F.) Mr. Mineka
- 134.* The Origins of American Naturalism. (3 cred.; jr., sr., grad.; prereq. 6 cred. in English literature above A-B-C; I MTWThF; 304F.) Mr. Bowron
155. The American Novel from Howells to the Present. (3 cred.; jr., sr., grad.; prereq. 6 cred. in English literature above A-B-C; III MTWThF; 303F.) Mr. Bowron

COMPOSITION

- Preparatory Composition. (See Preparatory Composition, first term.) (No cred.; I MTWThF; ar.) Ar.
4. Freshman Composition. (See 4, first term.) (3 cred.; all; prereq. placement test)
- Sec. 1, I MTWThF, 311½F, ar. Sec. 3, III MTWThF, 311½F, ar.
Sec. 2, II MTWThF, 311½F, ar.
5. Freshman Composition. (See 5, first term.) (3 cred.; all; prereq. Comp. 4 or Communication 1)
- Sec. 1, II MTWThF, 322F, ar. Sec. 3, IV MTWThF, 322F, ar.
Sec. 2, III MTWThF, 322F, ar.
6. Freshman Composition. (See 6, first term.) (3 cred.; all; prereq. Comp. 4-5 or Communication 1-2)
- Sec. 1, I MTWThF, 227F, ar. Sec. 3, IV MTWThF, 227F, ar.
Sec. 2, III MTWThF, 227F, ar.
27. Advanced Writing. (See 27, first term.) (3 cred.; all; prereq. †; II MTWThF; 302F.) Ar.

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

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

28. Advanced Writing. (See 28, first term.) (3 cred.; all; prereq. †)

Sec. 1, II MTWThF, 316F, Mrs. Phelan Sec. 2, III MTWThF, 316F, ar.

103. Seminar in Writing. (See 102, first term.) (3 cred.; sr., grad., but registration limited to 15 students; prereq. permission of instructor and for undergraduates, 6 cred. above 50 in composition; III-IV TF, V T; 302F.) Mrs. Phelan

FAMILY LIFE

See General Studies, below.

FINE ARTS

See Art, page 20.

FINNISH

See Scandinavian Area Studies, page 53.

FOREIGN STUDY SEMINAR

See General Studies, pages 29 and 31.

GENERAL STUDIES

FIRST TERM

COMMUNICATION

Com.1.‡ Communication. Experience in the arts of effective speaking and writing as well as discriminating reading and listening; and a study of agencies and methods for communicating ideas. This course is regarded as an equivalent of Composition 4-5-6 in satisfying any requirements of the University. (3 cred.; all; prereq. placement test, corresponds to G.E.D. test No. 1)

Sec. 1, II MTWThF, 311F, Miss Anderson Sec. 2, IV MTWThF, 305F, Mr. Wilhelm

Com.2. Communication. A continuation of Communication 1. (3 cred.; all; prereq. Communication 1; II MTWThF; 227F.) Mr. Bryan

Com.3. Communication. Continuation of Communication 1-2. (3 cred.; all; prereq. Communication 1-2; II MTWThF; 157TSF.) Mr. Ames

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.) Mrs. Dyer and others

Sec. 1, I MTWThF, 205F

Sec. 4, III MTWThF, 114F

Sec. 2, I MTWThF, 113F

Sec. 5, IV MTWThF, 202F

Sec. 3, III MTWThF, 212F

Sec. 6, IV MTWThF, 209½F

F.L.14.‡‡ Nutrition and Food Management. Scientific principles of nutrition; food purchasing; food preparation and service. The class is limited to 24 students and will afford practical laboratory experience. (5 cred.; no prereq.; VI-VII MTWThF; 5UHS.) Ar.

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

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

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

- 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.; I MTWThF; 206WeH.) Miss Myren
- 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 Child Welfare 40 or 80 may not receive credit for this course.) (3 cred.; all; no prereq.; IV MTWThF; 212F.) Mr. Harris

FOREIGN STUDY SEMINAR

161. Foreign Study Seminar. 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. for juniors and seniors, credit arranged for graduate students; prereq. approval before February by a faculty selection committee. Graduate students must have the approval of their faculty advisers also.)

HUMANITIES

- Hum.1.‡ Humanities in the Modern World I. The intellectual, political, and economic revolutions which gave humanity its modern world. Period: from about 1770 to about 1830. Authors: Voltaire, Rousseau, Burke, Paine, Goethe, and the poets. One historical novel. (3 cred.; all; no prereq.; IV MTWThF; 308F.) Mr. Castell
- Hum.2. Humanities in the Modern World II. The Industrial Revolution and Liberalism. How these bulked large in the nineteenth century. Period: from about 1830 to about 1870. Authors: Carlyle, Mill, Marx, Ibsen, Dostoevski, Zola, and the poets. (3 cred.; prereq. 1; III MTWThF; 308F.) Mr. Swanson
- Hum.3. Humanities in the Modern World III. The impact of evolution; socialism and imperialism; religion and morals in a changing world; the wars and totalitarianisms. Period: from about 1870 to about 1914. Authors: Huxley, Turgeneff, Nietzsche, Shaw, Lenin, Forster, and the poets. (3 cred.; prereq. 2; III MTWThF; 306F.) Mr. Bryan
- Hum.4. Humanities in the Modern World IV. An introduction to the study of humanities since World War I. The authors include Freud, Lenin, Shaw, Capek, Malraux, Thomas Mann, T. S. Eliot, and others. The background topics include civilization between two wars, the impact of psychoanalysis, creative evolution, communism versus fascism, etc. (3 cred.; prereq. 1 or 2 or 3)
- Sec. 1, II MTWThF, NHAud, Miss Shaw Sec. 2, IV MTWThF, 301F, Mr. Ames
- Hum.12. The Roman and Medieval Heritage. Roman jurisprudence and organization; epicureanism and stoicism. Selections from Lucretius, Epictetus, Marcus Aurelius. Medieval faith, theocracy, chivalry, monasticism. Selections from St. Augustine, St. Thomas Aquinas, the Rule of St. Benedict. Longer readings from Dante, Chaucer. Early religious painting, ecclesiastical and feudal architecture. (3 cred.; all; no prereq.; III MTWThF; 110F.) Mr. Holmer
- Hum.21.‡ American Life I. The growth and the interrelation of nationalism, regionalism, and internationalism in American social thought, literature, and the fine arts, against a background of history. (The same as American Studies 21.) (3 cred.; all; no prereq.; II MTWThF; 110F.) Miss Turpie
- Hum.131. Humanities Proseminar. Topic for course: Humanities in America. (2 cred.; sr., grad.; no prereq.; VI MTWTh; 110F.) Mr. Castell

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

NATURAL SCIENCE

- Nat.Sci.4.‡ The Physical World. This is the first quarter of Natural Science 4-5-6. The entire course deals with the essential elements of astronomy, physics, chemistry, and geology, selected to illustrate the methods of science and to acquaint the student with the universe around him. Course 4 deals with astronomy and physics. Course 5, dealing with physics and chemistry, will be offered second term of Summer Session. Students who wish to use the entire course to satisfy the natural science requirement under Plan I may complete the geology part of the course by registering for Geology 1 (which may be taken along with this course) or by taking Geology 8f in the fall. (3 cred.; all; no prereq.; III-IV MTWF; 150Ph.) Mr. Graubard
- Nat.Sci.172. The Development of the Sciences. The aim of this course is to provide a firsthand acquaintance and a broad perspective of man's quest for verifiable knowledge known as science. Beginning with medicine, it will show the interaction of the sciences with the social conditions and general culture of each period. (3 cred.; jr., sr., grad.; prereq. one year of biological and of physical science or consent of instructor; II MTWThF; 166Ph.) Mr. 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. (2 cred.; all; prereq. permission of counselor in 108 Folwell Hall)

Sec. 1, I MTWThF, 253TSE, Mr. Herbert Sec. 2, III MTWThF, 253TSE, Mr. Herbert

SOCIAL SCIENCE

- Soc.Sci.1. Introduction to Social Science. A study of the great social issues of our time and analysis of the proposed solutions. Information and insights from every source—sociological, economic, political, geographic, historical—are utilized to assist the student in making judgments necessary for effective citizenship. The entire course (Social Science 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 and the College of Education. (3 cred.; all; no prereq.; III MTWThF; 101NH.) Mr. Naftalin
- Soc.Sci.2. Introduction to Social Science. (Continuation of Soc. Sci. 1.) (3 cred.; all; prereq. Soc. Sci. 1; IV MTWThF; 101NH.) Mr. Naftalin

SECOND TERM

COMMUNICATION

- Com.2. Communication. (Continuation of Communication 1.) (3 cred.; all; prereq. 1; II MTWThF; 213F.) Mr. Livingston
- Com.3. Communication. (Continuation of Communication 1-2.) (3 cred.; all; prereq. Communication 1-2; II MTWThF; 205F.) Mr. Harkness

FAMILY LIFE

- F.L.1. Preparation for Marriage. (See 1, first term.) (3 cred.; all; no prereq.) Mrs. Dyer and others.

Sec. 1, I MTWThF, 205F

Sec. 2, I MTWThF, 113F

Sec. 3, III MTWThF, 212F

Sec. 4, III MTWThF, 114F

Sec. 5, IV MTWThF, 202F

Sec. 6, IV MTWThF, 209½F

- F.L.25. Child Development and Adjustment. (See 25, first term.) (3 cred.; all; no prereq.; IV MTWThF; 212F.) Miss Holbrook

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

FOREIGN STUDY SEMINAR

162. Foreign Study Seminar. (Continuation of Foreign Study 161.) (6 cred. for jr. and sr., cred. ar. for grad.; prereq. see 161.)

HUMANITIES

- Hum.2. Humanities in the Modern World II. (See 2, first term.) (3 cred.; all; prereq. Humanities 1; IV MTWThF; 301F.) Mr. Livingston
 Hum.3. Humanities in the Modern World III. (See 3, first term.) (3 cred.; all; prereq. Humanities 2; III MTWThF; 308F.) Mr. Swanson
 Hum.4. Humanities in the Modern World IV. (See 4, first term.) (3 cred.; all; prereq. Humanities 1 or 2 or 3)

Sec. 1, III MTWThF, 133Ph, Mr. Bryan Sec. 2, IV MTWThF, 201WeH, Mr. Cronin

- Hum.22. American Life II. The growth and interrelation of individualism and democracy, with particular attention to the status of minorities. (The same as American Studies 22.) (3 cred.; all; no prereq.; II MTWThF; 110F.) Ar.

NATURAL SCIENCE

- Nat.Sci.5.‡ The Physical World. (Continuation of Natural Science 4.) (3 cred.; all; prereq. Natural Science 4; III-IV MTWF; 150Ph.) Mr. Graubard
 Nat.Sci.173. The Development of the Sciences. (Continuation of Natural Science 172.) (3 cred.; jr., sr., grad.; prereq. one year of biological and of physical science or consent of instructor; II MTWThF; 166Ph.) Mr. Graubard

PERSONAL ORIENTATION

- Per.Or.1. How To Study. (See 1, first term.) (2 cred.; all; prereq. permission of counselor in 108 Folwell Hall)

Sec. 1, I MTWThF, 253TSE, Mr. Herbert Sec. 2, III MTWThF, 253TSE, Mr. Herbert

SOCIAL SCIENCE

- Soc.Sci.2. Introduction to Social Science. (See 2, first term.) (3 cred.; all; prereq. Soc. Sci. 1; III MTWThF; 110F.) Mr. Naftalin
 Soc.Sci.3. Introduction to Social Science. (Continuation of Soc. Sci. 1-2.) (3 cred.; all; prereq. Soc. Sci. 1-2; IV MTWThF; 110F.) Mr. Naftalin

GEOGRAPHY¶

FIRST TERM

41. Geography of Commercial Production. A study of commodities which enter into world trade and the geographic basis for their production. (5 cred.; all; no prereq.; V-VI MTWThF; 103Bu.) Mr. Burgy
 43. Political Geography. A consideration of geographic conditions as they affect international relations. (3 cred.; all; no prereq.; III MTWThF; 103Bu.) Mr. Küchler
 71. Geography of North America. A consideration of environmental conditions and their limiting effect on economic activities in the major geographic regions of the United States and Canada. (3 cred.; jr., sr.; prereq. 11; I MTWThF; 103Bu.) Mr. Weaver.
 101.* Geography of Europe. A detailed consideration of the present economic activities and future possibilities of the principal geographic regions of Europe. (3 cred.; jr., sr., grad.; prereq. 11; IV MTWThF; 103Bu.) Mr. Küchler

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

¶ All classes limited to 60 students.

- 125.* Geography of the Polar Regions. A study of high latitude areas and recent developments in these regions. (3 cred.; jr., sr., grad.; prereq. 11; II MTWThF; 103Bu.) Mr. Weaver

SECOND TERM

11. Human Geography. A study of the factors of the physical environment and their effect on human activities. (5 cred.; all; no prereq.; III-IV MTWThF; 103Bu.) Mr. Kùchler
- 110.* Geography of South America. The environmental basis for population distribution and economic activities in selected type areas. (3 cred.; jr., sr., grad.; prereq. 11; II MTWThF; 103Bu.) Ar.

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, 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.) Mr. Thiel
- 150.§ Field Geology (Black Hills)—June 15 to July 15, approximately. (Cred. ar.; jr., sr., grad.; prereq. 125.) Mr. Gruner, Mr. Wright
170. Geologic Problems. (3 cred.; jr., sr., grad.; prereq. permission of major adviser; ar.; ar.) Mr. Thiel

NOTE—For further information, see instructors.

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

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.) Mr. Swain
100. Field Work in Northern Minnesota—July 15 to 30, approximately. Students interested in this field trip should consult the department. (3 cred.; jr., sr.; prereq. 105.) Mr. Gruner, Mr. Bell, Mr. Wright
170. Geologic Problems. (3 cred.; jr., sr., grad.; prereq. permission of major adviser; ar.) Mr. Swain

GERMAN

FIRST TERM

1. Beginning A. (5 cred.; all; no prereq.; I-II MTWThF; 209F.) Mr. Prottegeier
2. Beginning B. (5 cred.; all; prereq. German 1 or one year of high school German; I-II MTWThF; 212F.) Ar.
3. Beginning C. (5 cred.; all; prereq. German 2 or two years of high school German; I-II MTWThF; 213F.) Mr. Menze
4. Intermediate. (5 cred.; all; prereq. German 3 or three years of high school German; I-II MTWThF; 209½F.) Mr. Pfeiffer
77. Faust I. (3 cred.; jr., sr.; prereq. 63 and 3 additional cred. above 59; ar.; ar.) Mr. Downs

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

130. Hans Sachs. (3 cred.; sr., grad.; prereq. 63 and 11 cred. above 59 or equiv.; ar.; ar.)
Mr. Downs
160. Heinrich Heine. (3 cred.; sr., grad.; prereq. 63 and 11 cred. above 59 or equiv.;
ar.; ar.) Mr. Pfeiffer

SECOND TERM

2. Beginning B. (See 2, first term.) (I-II MTWThF; 212F.) Miss Wangsness
3. Beginning C. (See 3, first term.) (I-II MTWThF; 209½F.) Mr. Uhle
4. Intermediate. (See 4, first term.) (I-II MTWThF; 209F.) Mr. Ramras

GREEK

See Classics, page 24.

HISTORY

FIRST TERM

1. Civilization of the Modern World. Part I of freshman survey. (3 cred.; all; no prereq.;
I MTWThF; 202WuH.) Miss Helmes
2. Civilization of the Modern World. Part II of freshman survey. (3 cred.; all; no
prereq.; III MTWThF; 111Bu.) Miss Helmes
5. English History: Tudors and Stuarts. Part II of freshman survey. (3 cred.; no
prereq.; II MTWThF; 253TSF.) Mr. Smith
20. American History: Colonial and Early National Period. (3 cred.; soph., jr., sr.; no
prereq.; IV MTWThF; 111Bu.) Mr. Reynolds
21. American History: Sectionalism and National Development. (3 cred.; soph., jr., sr.;
no prereq.; III MTWThF; 112Bu.) Mr. Reynolds
51. Greek History: Part II, The Periclean Age. (3 cred.; jr., sr.; no prereq.; II
MTWThF; 114F.) Mr. Jones
- 54a. Renaissance and Reformation, Part II. (3 cred.; jr., sr.; II MTWThF; 111Bu.)
Miss Thompson
- 58a. Russia: From Alexander II to the Present. (3 cred.; jr., sr.; no prereq.; III
MTWThF; 221 Bu.) Mr. Anderson
- 58b. History of the Middle East: From 1801 to the Present. (3 cred.; jr., sr.; no prereq.;
IV MTWThF; 221Bu.) Mr. Anderson
62. European Overseas Expansion to 1600. (3 cred.; jr., sr.; no prereq.; III MTWThF;
102NH.) Mr. Willson
72. English Constitutional History: In the Last Two Centuries. (3 cred.; open to pre-
legal soph. with at least a C average in Courses 4-5-6, 1-2-3, or in all their college
work, and to all jrs. and srs.; IV MTWThF; 112Bu.) Miss Thompson
75. Modern England, Nineteenth and Twentieth Centuries. (3 cred.; jr., sr.; I MTWThF;
111Bu.) Mr. Willson
90. The American West: The Colonial Frontier. (3 cred.; jr., sr.; II MTWThF; 221Bu.)
Mr. Osgood
93. American Diplomatic History, Part I. (3 cred.; jr., sr.; III MTWThF; 207NH.)
Mr. Beatty
- 94a. Latin-American History, Part II. (3 cred.; jr., sr.; I MTWThF; 221Bu.) Mr.
Beatty
101. Greek History. (For students seeking graduate credit in 51.) Mr. Jones
- 105a. Renaissance and Reformation. (For students seeking graduate credit in 54a.) Miss
Thompson
107. European Overseas Expansion to 1600. (For students seeking graduate credit in 62.)
Mr. Willson

- 109a. Russia. (For students seeking graduate credit in 58a.) Mr. Anderson
 109b. History of the Middle East. (For students seeking graduate credit in 58b.) Mr. Anderson
 112. English Constitutional History. (For students seeking graduate credit in 72.) Miss Thompson
 112a. Modern England. (For students seeking graduate credit in 75.) Mr. Willson
 122. The American West: The Colonial Frontier. (For students seeking graduate credit in 90.) Mr. Osgood
 125. American Diplomatic History. (For students seeking graduate credit in 93.) Mr. Beatty
 137a. Latin-American History. (For students seeking graduate credit in 94a.) Mr. Beatty
 150. Readings in Ancient History. (Greek Archeology.) (3 cred.; sr., grad.; IV MTWThF; 115F.) Mr. Jones
 190. Readings in History of the West, Colonial Period. (3 cred.; sr., grad.; IV MTWThF; 109Psy.) Mr. Osgood

SECOND TERM

3. Civilization of the Modern World. Part III of freshman survey. (3 cred.; all; no prereq.; I MTWThF; 111Bu.) Mr. Lindgren
 22. American History, Part III. (3 cred.; soph., jr., sr.; no prereq.; I MTWThF; 112Bu.) Mr. Wyman
 55a. Renaissance and Reformation, Part III. (3 cred.; jr., sr.; III MTWThF; 111Bu.) Mr. Krey
 67a. Background and Early Phases of World War II. (3 cred.; jr., sr.; I MTWThF; 221Bu.) Mr. Deutsch
 87. American Colonies, Part II. (3 cred.; jr., sr.; I MTWThF; BuAud.) Mrs. Tyler
 87a. Social and Intellectual History of the United States, Part II. (3 cred.; jr., sr.; III MTWThF; 112Bu.) Mrs. Tyler
 91. The American West: Mid-America. (3 cred.; jr., sr.; III MTWThF; 221Bu.) Mr. Wyman
 106a. Renaissance and Reformation. (For students seeking graduate credit in 55a.) Mr. Krey
 109. Background and Early Phases of World War II. (For students seeking graduate credit in 67.) Mr. Deutsch
 123. The American West: Mid-America. (For students seeking graduate credit in 91.) Mr. Wyman
 132. American Colonies. (For students seeking graduate credit in 87.) Mrs. Tyler
 134. Anglo-American Cultural Relations to 1800. (Same as American Studies 134.) (3 cred.; jr., sr., grad.; no prereq.; III MTWThF; 201WuH.) Mr. Kraus
 140. Modern Scandinavian History. (Same as Scandinavian Area 140.) (3 cred.; jr., sr., grad.; no prereq.; III MTWThF; 4F.) Mr. Lindgren
 147. Social and Intellectual History of the United States, Part II. (For students seeking graduate credit in 87a.) Mrs. Tyler
 149. History of Historical Writings in America. (Same as American Studies 149.) (3 cred.; jr., sr., grad.; no prereq.; IV MTWThF; 112Bu.) Mr. Kraus
 156. Selected Readings in Twentieth-Century Europe. (3 cred.; sr., grad.; III MTWThF; 109Psy.) Mr. Deutsch

HUMANITIES

See General Studies, pages 29 and 31.

JAPANESE

See Linguistics and Comparative Philology, page 38.

LATIN

See Classics, page 24.

SCHOOL OF JOURNALISM

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

FIRST TERM

11. Introduction to Reporting (for minors). Open only to students in colleges of the University other than Science, Literature, and the Arts who have permission to take work for a minor under the cooperative programs of the School of Journalism and these colleges. Enrolment is limited to thirty students in a section. (3 cred.; soph., jr., sr., with C average or better; prereq. Eng. A-B-C or Comp. 4-5-6 or Com. 1-2-3 or Rhetoric 1-2-3 or exemption from English requirement)

Sec. 1, I MTWThF, 206MurH, Mr. Ford Sec. 2, IV MTWThF, 420MurH, Mr. Hiebert

13. Introduction to Reporting. Lectures, practice, and conferences. Practical instruction in news gathering, news writing, and news analysis. The study of news sources and the problems of the reporter. Reports on aspects of leading American newspapers and on selected books dealing with the contemporary newspaper. Enrolment is limited to twenty-eight students in a section. (3 cred.; soph., jr., sr., with C average or better; prereq. Eng. A-B-C or Comp. 4-5-6 or Com. 1-2-3 or exemption from English requirement)

Sec. 1, I-II MTWThF, 212MurH, Mr. Janson
Sec. 2, III-IV MTWThF, 212MurH, Mr. Patterson

15. Newspaper Reporting. Advanced reporting problems, both in news gathering and news writing. Extensive practice assignments. Specialized news sources. Writing the feature story with emphasis on personality, chronological, "color", and historical articles. Enrolment is limited to twenty-eight students in a section. (3 cred.; soph., jr., sr.; prereq. C average or better in 13-14 and in all work, or consent of instructor, and Comp. 27-28, which may be taken concurrently)

Sec. 1, I-II MTWThF, 210MurH, Mr. Patterson
Sec. 2, VI-VII MTWThF, 210MurH, Ar.

- 51.‡ News Editing. Instruction and practice in editing news copy, proofreading, headline writing, and news evaluation. News display and makeup. Enrolment is limited to fifteen students in a section. (3 cred.; jr., sr.; prereq. 14 and Senior College standing)

Lect. IV MW, 308MurH, Mr. Janson Lab. Sec. 1, IV-V TF, 206MurH, Mr. Janson
Lab. Sec. 2, VI-VII, MW, 206MurH, Mr. Janson
Lab. Sec. 3, VI-VII TTh, 206MurH, ar.

- 55.‡‡ Advertising and Newspaper Typography. The study of traditional and modern type designs. Principles of typographical arrangement of advertisements and newspaper pages. Lectures and laboratory work designed to teach the student how to work with type, how to prepare layouts, and the use of headline forms, copy blocks, illustrations, borders, type devices and other layout and makeup patterns. The course is planned for supervisors of school publications as well as for undergraduate majors in journalism and others who have approval to enter the course under cooperative programs of the School of Journalism and other departments. Enrolment is limited to fifteen

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

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

students in a section. (3 cred.; prereq. for journalism majors, Senior College standing; for minors, 11 and 41)

Lect. VI MW, 308MurH, Mr. Barnhart Lab. Sec. 1, VI-VII TTh, 315MurH,
Mr. Barnhart
Lab. Sec. 2, VIII-IX MW, 315MurH,
Mr. Barnhart

67.‡ Radio News Writing. Editing news for radio broadcast; radio news style; news commentary, special events, interviews, news dramatization and other special radio news forms. Students aid in the preparation of news broadcasts for KUOM, the University radio station. (3 cred.; jr., sr.; prereq. 15)

Lect. III-IV MWF, 302MurH, Mr. Charnley Lab. III-IV TTh, 302MurH, Mr. Charnley

73. Magazine Writing and Editing. Lectures and conferences. The writing of non-fiction articles for periodicals, general and specialized, and for newspapers; instruction in magazine editing. Subjects and materials; analysis of manuscript markets; study of magazine policies and practices. Students with special training and aptitude may devote some attention to editing problems of book publishers. Enrolment limited to thirty students in a section. (3 cred.; jr., sr.; prereq. 15, or consent of instructor)

Sec. 1, I MTWThF, 302MurH, Mr. Charnley Sec. 2, IV MTWThF, 311MurH, ar.

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; 311MurH.) Ar.

94. Newspaper Advertising. The role of newspaper advertising; the newspaper's relations with the retail advertiser, national representative, and advertising agency; organization of advertising departments; rate structure; services. Practice in writing advertising copy, with particular emphasis upon retail advertising. Enrolment of non-majors is sharply limited. (3 cred.; jr., sr.; prereq. 51 and 55, or 41, 55, and consent of instructor; II MTWThF; 308MurH.) Mr. Barnhart

109.* History of Journalism. This course deals with the early history of the press; the forerunners of the newspaper on the European continent and in England; and the later development of the newspaper in the seventeenth and eighteenth centuries in America and England. (3 cred.; jr., sr., grad.; prereq. 13 and Senior College standing; IV MTWThF; 105MurH.) Mr. Ford

111.* International Communication and the Foreign Press. The channels of international communication and the network of international newsgathering agencies. The problems created by the nationalistic control of cables, wireless, and radio facilities and the struggle for domination of communication facilities in peacetime and in wartime. An examination is made of foreign news and the methods by which it is obtained, transmitted and processed for American readers. Techniques, problems, and responsibilities of the foreign correspondent. The press in European, Far Eastern, and Latin-American countries. The factors affecting the content and flow of news from those areas. (3 cred.; jr., sr., grad.; no prereq.; II MTWThF; 311MurH.) Mr. Hovey

130.* Communication Agencies and Public Opinion. The agencies of mass communication and their role in the opinion-making process. Propaganda techniques and strategies of governments (in war and peace), political parties, pressure groups and other organized groups that seek to control mass behavior. Democratic procedures in appealing to public opinion contrasted with authoritarian methods of enforcing acceptance. Present-day cultural relations programs of national states and propaganda campaigns on the ideological front. (3 cred.; jr., sr., grad.; prereq. 15 credits in the social studies; III MTWThF; 105MurH.) Mr. Casey

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

140. Interpretation of Contemporary Affairs. The interpretation in the communication media of important state, national, and international problems. Editorials and interpretative articles are written after careful initial study of significant and timely developments in political, economic, and social areas. Structure of editorials and "background" articles; editorial policy and direction; editorial page content. (3 cred.; sr., grad.; prereq. 51 and 10 credits in the social studies or consent of major adviser in journalism; I MTWThF; 308MurH.) Mr. Hovey
- 210.* Research in Newspaper Problems. Individual research in problems of mass communication. (2-3 cred.; prereq. graduate standing and consent of instructor; hr. ar.; 405MurH.) Ar.

SECOND TERM

14. Newspaper Reporting. Advanced reporting problems, both in news gathering and news writing. Enrolment is limited to twenty-eight students in a section. (3 cred.; soph., jr., sr.; prereq. C average in 13 and in all work, or consent of instructor)
- Sec. 1, I-II MTWThF, 212MurH, Mr. Hage Sec. 2, III-IV MTWThF, 212MurH,
Mr. Hiebert
- 41.‡ Editing for Non-Majors (not open to S L and A students without permission of a major adviser in the School of Journalism). Copy-editing, headline writing, proof-reading; editing problems for school publications, specialized journals, and the like; editorial planning for the smaller publication. (3 cred.; prereq. 11 or 13)
- Lect. IV MWF, 308MurH, Mr. Emery Lab. Sec. 1, IV-V TTh, 206MurH, Mr. Emery
Lab. Sec. 2, I-II MW, 206MurH, Mr. Wilson
- 55.‡ Advertising and Newspaper Typography. (See 55, first term.) Enrolment is limited to fifteen students in a section. (3 cred.; prereq. see 55, first term)
- Lect. VI MW, 311MurH, Mr. Wilson Lab. Sec. 1, VI-VII TTh, 315MurH, Mr. Wilson
Lab. Sec. 2, VII-VIII MW, 315MurH, Mr. Wilson
Lab. Sec. 3, VI-IX F, 315MurH, Mr. Wilson
69. Newspaper and Magazine Articles (for minors only). Technique of writing feature articles for newspapers and magazines; techniques of house magazines and other specialized publications. (3 cred.; jr., sr.; prereq. 41; IV MTWThF; 302MurH.) Mr. Hage
101. The Reporting of Public Affairs. Training in reporting court trials, city, county, state, federal administrative and legislative agencies; politics, business, labor, and science. Field work is required to enable students to report trials, hearings, legislative sessions and press conferences. (3 cred.; jr., sr., grad.; prereq. 51 and enrolment as a Journalism major; III MTWThF; 308MurH.) Mr. Duncan
- 110.* History of Journalism. The course begins with the rise of the popular press in the 1830's and deals generally with the emergence of the modern newspaper in America. Stress is placed on the major social influences that have shaped the pattern of the press. Contributions of leading publishers and editors are discussed. (3 cred.; jr., sr., grad.; prereq. 13 and Senior College standing; II MTWThF; 105MurH.) Mr. Emery
112. Current Newspaper Problems. The function of the press in modern society; its relation to government, labor, agriculture, industry, education, the law, foreign affairs, entertainment and sports; the internal structure of the press; problems relating to ownership and operation. (3 cred.; jr., sr., grad.; prereq. 51; I MTWThF; 105MurH.) Ar.

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

- 121.* The Newspaper in a Dynamic Society. How political, economic and social forces in America have shaped the newspaper as a social institution. The newspaper of the future. (3 cred.; jr., sr., grad.; prereq. 15 or consent of instructor; I MTWThF; 308MurH.) Mr. Gerald
141. Interpretation of Contemporary Affairs. (See 140, first term.) (3 cred.; sr., grad.; prereq. 140; IV MTWThF; 311MurH.) Mr. Duncan

LINGUISTICS AND COMPARATIVE PHILOLOGY¶

FIRST TERM

JAPANESE

1. Beginning Japanese. Introduction to conversational Japanese using romazi. (4 cred.; all; no prereq.; I-II TWThF; 203TSF.) Mrs. Syro-Boyarsky

RUSSIAN

1. Beginning Russian. Special attention to the needs of those who desire a reading knowledge of modern Russian. (4 cred.; all; no prereq.; I-II TWThF; 109TSF.) Miss Niemi
102. Dostoevski and Tolstoy. Lectures on their most significant works with consideration of their European background. No knowledge of Russian required. (3 cred.; jr., sr., grad.; prereq. 8 cred. in literature; III MTWThF; 109TSF.) Miss Niemi

SECOND TERM

JAPANESE

2. Beginning Japanese. Reading of Japanese texts; instruction in writing of characters, use of Chinese-Japanese character dictionary, and further conversation. (4 cred.; all; prereq. 1; I-II TWThF; 203TSF.) Mrs. Syro-Boyarsky

RUSSIAN

2. Intermediate Russian. Continuation of Russian 1. (4 cred.; all; prereq. 1; I-II TWThF; 109TSF.) Mrs. Blinoff

MATHEMATICS

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. 1 yr. of elementary algebra in high school; open for credit to any student offering not more than one-half year of high school higher algebra for entrance credit; I-II MTWThF; 101F.) Mr. Haltiner, Mr. Ranheim
6. Trigonometry. A treatment of logarithms and plane trigonometry. (5 cred.; all; prereq. plane geometry and either 1 or high school higher algebra; I-II MTWThF; 102F.) Mr. Scherer
7. College Algebra. Selected topics in algebra commencing with quadratic equations and extending through the theory of equations and determinants, omitting logarithms. (5 cred.; all; prereq. 1 or high school higher algebra; III-IV MTWThF; 101F.) Mr. Temte
8. Commerce Algebra. College algebra including logarithms. (5 cred.; primarily for pre-business students but open also to others; prereq. 1 or high school higher algebra; I-II MTWThF; 104F.) Miss Horeni

¶ Credit will be allowed in Linguistics for Spanish 241, Spanish Philology; English 100, Old English; English 165, Introduction to Modern English; English 174, American English.

15. Elementary Mathematical Analysis I. This, together with Course 16, provides a course for premedical and other students who desire a survey of college mathematics including trigonometry, algebra, and calculus with emphasis on fundamental ideas rather than on technical preparation for more advanced courses in mathematics. (5 cred.; all; prereq. 1 or high school higher algebra; III-IV MTWThF; 102F.) Mr. Fleming, Mr. Lindgren
20. Mathematics of Investment. The principles and applications of the theory of interest, annuities, amortization, valuation of bonds, sinking funds, and depreciation. (5 cred.; all; prereq. 8, or 6 and 7; I-II MTWThF; 105F.) Mrs. Lund, Miss Owchar
30. Analytic Geometry. (5 cred.; all; prereq. 6 and 7 or 6 and 8 or 15 and 16; III-IV MTWThF; 104F.) Mr. Bearman, Mr. Donsker
50. Calculus I: Differential Calculus. (5 cred.; jr., sr.; prereq. 30; I-II MTWThF; 125F.) Mr. Graves, Mr. Indritz
51. Calculus II: Integral Calculus. (5 cred.; jr., sr.; prereq. 50; III-IV MTWThF; 105F.) Miss Gibbens, Mr. Haltiner
- 102.* Advanced Analytic Geometry. (3 cred.; jr., sr., grad.; prereq. 51; IV MTWThF; 124F.) Miss Carlson
106. Differential Equations. A first course in differential equations with emphasis on their applications in physics and geometry. (3 cred.; jr., sr., grad.; prereq. 51; I MTWThF; 124F.) Mr. Loud
- 113.* Mathematical Recreations. Mathematical aspects of recreations that lend themselves to such treatment. Topics include figurate numbers, cryptarithmic, magic squares, prime numbers, paradoxes, dissection puzzles, permutations, combinations, cyclic numbers, wire puzzles and mathematical models. (3 cred.; jr., sr., grad.; prereq. 50 or consent of instructor; III MTWThF; 124F.) Mr. Hatfield
- 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 state solutions, Fourier series, and the differential equations of Bessel, Laplace, and Legendre. (3 cred.; jr., sr., grad.; prereq. 51; IV MTWThF; 125F.) Mr. Hatfield
- 136.* Solid Analytic Geometry. (3 cred.; jr., sr., grad.; prereq. 50 or registration in 50; II MTWThF; 124F.) Miss Carlson
- 160.* Numerical Methods in Computation. Numerical techniques in solving algebraic and differential equations. Topics include root-squaring, iterative processes, and numerical integration. Methods are studied with a view to their use with present-day computing equipment. No previous knowledge of differential equations is required. (3 cred.; jr., sr., grad.; prereq. 51; III MTWThF; 125F.) Mr. Loud
- 248.* Reading and Research. (Cred. ar.; grad.; prereq. consent of instructor; ar.; ar.) Mr. Cameron

SECOND TERM

1. Higher Algebra. (See 1, first term.) (I-II MTWThF; 101F.) Mr. Berggren
6. Trigonometry. (See 6, first term.) (I-II MTWThF; 102F.) Mr. Boekelheide
7. College Algebra. (See 7, first term.) (I-II MTWThF; 104F.) Mr. Scherer
16. Elementary Mathematical Analysis II. (See 15, first term.) (III-IV MTWThF; 102F.) Mr. Fleming, Mr. Lindgren
20. Mathematics of Investment. (See 20, first term.) (I-II MTWThF; 105F.) Mrs. Lund
51. Calculus II: Integral Calculus. (5 cred.; jr., sr.; prereq. 50; I-II MTWThF; 124F.) Mr. Jensen, Mr. Indritz
105. Intermediate Calculus. (5 cred.; jr., sr., grad.; prereq. 51; III-IV MTWThF; 124F.) Mr. Olmsted, Mr. Berggren

- 118.* Vector Analysis. (3 cred.; jr., sr., grad.; prereq. 51; IV MTWThF; 125F.) Mr. Bearman
- 126.* The Calculus of Finite Differences. The basic definitions and formulas with applications to the summation of series, interpolation, numerical integration, and the solution of simple difference equations. The analogy between the calculus of finite differences and the infinitesimal calculus is investigated and an introduction given to the Euler-Maclaurin summation formula. (3 cred.; jr., sr., grad.; prereq. 51; III MTWThF; 125F.) Mr. Bearman
- 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; I MTWThF; 125F.) Mr. Hatfield
- 139.* Limits and Series. The analytical theory of limits with applications to infinite series. (3 cred.; jr., sr., grad.; prereq. 51; II MTWThF; 125F.) Mr. Hatfield
- 248.* Reading and Research. (See 248, first term.) Mr. Cameron

MUSIC‡

FIRST TERM

Violin 13B, viola 14B, and cello 15B and also Instrumental Ensemble 60B, will be taught by members of the Budapest String Quartet, each course carrying a special fee.

1. Fundamentals of Music. (2 cred.; for non-music majors. Primarily for child welfare and elementary school teachers; no prereq.; I MTWThF; 3Mu.) Ar.
- 1T. Music Theory. A correlated course including ear training, sight singing, melodic and harmonic dictation, keyboard and written harmony. (3 cred.; prereq. consent of instructor; I, II MTWThF; 103Mu.) Mr. Feese
- 3T. Music Theory. Continuation of the correlated course including ear training, sight singing, melodic and harmonic dictation, keyboard and written harmony. (3 cred.; prereq. 2T or consent of instructor; III, IV MTWThF; 103Mu.) Mr. Feese
11. Piano. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mrs. Hunter, Miss Kendall, Mr. Rymer
12. Voice. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Miss Hull, Mr. Schuessler
13. Violin. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
- 13B. Violin. One hour lesson a week. Fee \$50. (2 cred.; ar.; Mu.) Member of Budapest String Quartet
14. Viola. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
- 14B. Viola. One hour lesson a week. Fee \$50. (2 cred.; ar.; Mu.) Member of Budapest String Quartet
15. Cello. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
- 15B. Cello. One hour lesson a week. Fee \$50. (2 cred.; ar.; Mu.) Member of Budapest String Quartet
16. Double Bass. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Fitch
17. Flute. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Winkler, Mrs. Arnegaard
18. Oboe. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Angelucci
19. Clarinet or Saxophone. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Handlon
20. Bassoon. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Santucci
21. Trumpet. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Greco, Mr. MacKay
22. French Horn. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Linder

‡ Students taking fee courses in Music pay only the special fees indicated for these courses. Such students may take other courses for an additional tuition of \$20, incidental fee \$6, and special course fees.

23. Trombone. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. MacKay
 24. Tuba. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. MacKay
 25. Percussion. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Segal
 26. Harp. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
 27. Organ. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Jennings
 31. Music Appreciation. Cultivation of better understanding of music heard today. The course is designed for students with a general interest in music. (2 cred.; all; no prereq.; I MTWThF; 202WeH.) Mr. Ivory
 34. History of Music. (2 cred.; all; no prereq.; III MTWThF; 4Mu.) Mr. Ferguson
 44. University Chorus. (1 cred.; all; prereq. consent of instructor; IV MTWTh; 4NMA.) Ar.
 60B. Instrumental Ensemble. Fee \$25. (2 cred.; jr., sr.; prereq. consent of instructor; VI MTWTh; 104Mu.) Members of Budapest String Quartet
 73-74-75. Advanced Harmony. (2 cred.; jr., sr.; prereq. Mu 6T or equiv.; II MTWThF; 3Mu.) Ar.
 77-78-79. Composition. (2 cred.; prereq. 4T-5T-6T, 7-8; ar.; 102Mu.) Mr. Ferguson, Mr. Siegmeister
 83-84-85. Advanced Composition. (2 cred.; prereq. 77-78-79; ar.; 102Mu.) Mr. Ferguson, Mr. Siegmeister
 86-87-88. Orchestration. (2 cred.; prereq. 6T; III MTWTh; 3Mu.) Mr. Siegmeister
 101. American Music. (3 cred.; sr., grad.; prereq. consent of instructor; IV MTWThF; 3Mu.) Mr. Siegmeister
 200-201-202. Basis of Musical Expression. (3 cred.; grad.; VII, VIII MWTh; 104Mu.) Mr. Ferguson
 205-206-207. Composition in Larger Forms. (3 cred.; grad.; ar.; 102Mu.) Mr. Ferguson and visitor
 209-210-211. Advanced Topics in Musical Analysis. (3 cred.; grad.; V, VI MTW; 105Mu.) Mr. Oberg
 212. Special Problems in Music. (3 to 9 cred.; grad.; prereq. 202 or 211; ar.; ar.) Mr. Oberg.

SECOND TERM

1. Fundamentals of Music. (2 cred.; for non-music majors. Primarily for child welfare and elementary school teachers; no prereq.; I MTWThF; 3Mu.) Mr. Feese
 2T. Music Theory. A correlated course including ear training, sight singing, melodic and harmonic dictation, keyboard and written harmony. (3 cred.; prereq. 1T or consent of instructor; II-III MTWThF; 3Mu.) Mr. Feese
 4T. Music Theory. (4 cred.; prereq. Mu. 4T or consent of instructor; II-III MTWThF; 103Mu.) Ar.
 11. Piano. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
 12. Voice. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
 13. Violin. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
 14. Viola. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Barton
 15. Cello. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Meltzer
 16. Double Bass. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Fitch
 17. Flute. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Winkler
 18. Oboe. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Angelucci
 19. Clarinet or Saxophone. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Handlon
 20. Bassoon. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Santucci
 21. Trumpet. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Greco, Mr. MacKay
 22. French Horn. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Linder
 23. Trombone. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. MacKay

24. Tuba. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. MacKay
25. Percussion. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Mr. Segal
26. Harp. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
27. Organ. Two lessons a week. Fee \$30. (2 cred.; ar.; Mu.) Ar.
32. Music Appreciation. A continuation of Mu. 31. (2 cred.; all; no prereq.; I MTWThF; 202WeH.) Mr. Ivory
45. University Chorus. (1 cred.; all; prereq. consent of instructor; IV MTWTh; 5NMA.) Ar.
67. Choral Chamber Group. A study through performance of choral literature for small vocal groups. (1 cred.; prereq. consent of instructor.) Mr. Siegmeister
- 73-74-75. Advanced Harmony. (2 cred.; jr., sr.; prereq. Mu. 6T or consent of instructor; I MTWTh; 103Mu.) Mr. Siegmeister
76. Form and Analysis. Key, harmonic, and form analyses of important contrapuntal and homophonic music, especially that of Bach and Beethoven. (3 cred.; jr., sr.; prereq. 6T; IV MTWThF; 103Mu.) Mr. Stephens
- 77-78-79. Composition. Creative work in musical forms. (2 cred.; jr., sr.; prereq. 6T, 7-8; ar.; ar.) Mr. Siegmeister
- or
- 86-87-88. Orchestration. A study of the instruments of the orchestra together with a practical study of the art of symphonic scoring. (2 cred.; jr., sr.; prereq. 6T; ar.; ar.) Mr. Siegmeister
- 212.* Special Problems in Music. (3 to 9 cred.; grad.; prereq. 202 or 211; ar.; ar.) Mr. Oberg

NATURAL SCIENCE

See General Studies, pages 30 and 31.

NORWEGIAN

See Scandinavian Area Studies, page 53.

PERSONAL ORIENTATION

See General Studies, pages 30 and 31.

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; 301F.) Mr. Conger
2. Logic. A study of the difference between logical and fallacious reasoning; types of fallacies; the rules of a good definition; syllogisms; what constitutes proof; hypothesis; generalization; probability; evaluation. (3 cred.; soph., jr., sr.; no prereq.; III MTWThF; 301F.) Mr. Wiggins
3. Ethics. Problems of life treated in terms of (1) contemporary social; political, and economic forces, and (2) the character of the individual. The psychological and philosophical foundations of morality; the reconstruction of morality; the history of morals and ethical thought. (3 cred.; soph., jr., sr.; no prereq.; II MTWThF; 133Ph.) Mr. Swanson

10. Science and Religion. An inquiry into the nature of science and religion as currently interpreted, with an attempt to find grounds of conflict and/or reconciliation. (3 cred.; soph., jr., sr.; no prereq.; IV MTWThF; 213NH.) Mr. Holmer
50. History of Philosophy (Ancient). (3 cred.; soph., jr., sr.; no prereq.; III MTWThF; 226F.) Miss Shaw
70. Modern Philosophies of Social Reform—from the French Revolution to 1848. Social criticism in the period of rising industrialism. A consideration of the philosophical basis of liberalism, utopian socialism, and democracy. (3 cred.; jr., sr.; no prereq.; I MTWThF; 322F.) Mr. Wiggins
114. American Philosophy from Puritanism to Pragmatism. (3 cred.; jr., sr., grad.; especially for students of American history and literature; III MTWThF; 202F.) Mr. Blau
120. The Influence of European Philosophy upon American Thought. (Same as American Studies 120.) (3 cred.; jr., sr., grad.; no prereq.; II MTWThF; 2F.) Mr. Blau
182. Philosophy of Religion. Discussion of the ground and sanctions of religion, according to various philosophies. (3 cred.; jr., sr., grad.; prereq. 6 cred.; II MTWThF; 321F.) Mr. Conger
191. Seminar. Research Problems in Philosophy. (Cred. and hrs. ar.; open only to properly qualified students upon consultation with instructor.) Mr. Conger and others

SECOND TERM

1. Problems of Philosophy. (See 1, first term.) (3 cred.; soph., jr., sr.; no prereq.; I MTWThF; 301F.) Mr. Holmer
2. Logic. (See 2, first term.) (3 cred.; soph., jr., sr.; no prereq.; III MTWThF; 301F.) Mrs. Brodbeck
3. Ethics. (See 3, first term.) (3 cred.; soph., jr., sr.; no prereq.; II MTWThF; 308F.) Mr. Swanson
63. Principles of Mature Thinking. From infantile to adult intelligence. A study of language, meaning, understanding, reasoning, and the ways of knowing. The functions of logic and experience. Critique of infantilism in thought and conduct. Applications to problems of philosophy and education. (3 cred.; jr., sr.; no prereq.; IV MTWThF; 305F.) Mr. Feigl
113. Kierkegaard and Scandinavian Philosophy. (Same as Scandinavian Area Studies 113.) 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; 305F.) Mr. Holmer.
- 115.* Contemporary Philosophy. A study of current systematic and critical philosophies especially idealism, naturalism, realism, pragmatism, positivism, and existentialism, as represented by their principal exponents. (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor; IV MTWThF; 321F.) Mrs. Brodbeck
- 153.* Philosophy of Science. An attempt to provide a clear understanding of the meaning, methods, and implications of modern science through an examination of basic concepts, presuppositions and procedures. The topics include description, explanation, prediction, experimentation; space, time, number; matter, energy; causality, probability, statistics; organic life, evolution, mind. (3 cred.; jr., sr., grad.; prereq. Phil. 2, Logic; III MTWThF; 305F.) Mr. Feigl
- 192.* Seminar. Research Problems in Philosophy. (Cred. and hrs. ar.; open only to properly qualified students upon consultation with instructor.) Mr. Feigl and others

PHYSICS

FIRST TERM

A. Physics for Nurses. This course is designed especially for nurses. Consists of lecture-demonstrations on selected topics from mechanics, sound, heat, light, electricity and modern physics. Special emphasis will be given to application of physical facts and principles to nursing practice. (3 cred.; registration restricted to nurses; no prereq., lect. and quiz VI MTWThF; 133Ph.) Mr. Kruglak

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; 150Ph.) Ar.

1a.† Introduction to Physical Science. Mechanics and heat. Lab. included. May be applied toward group requirements in SLA. (4 cred.; all; prereq. high school algebra and plane geometry) Ar.

Lect. I MTWThF, 150Ph

All lab. sec. in 153Ph

Lab. Sec. 1, III-IV TTh

Lab. Sec. 2, VI-VII MW

Lab. Sec. 3, VIII-IX TTh

4.‡‡ General Physics, Part I. Mechanics. (Primarily for premedical students.) Lab. (one 2-hour period) included. (2½ cred.; all; prereq. completion of Math. 15-16, or with permission of the department chairman, Math. 6 and either Math. 7 or 8.) Mr. Wall

Lect. and quiz, I MTWThF, 166Ph

All lab. sec. in 153Ph

Lab. Sec. 1, III-IV M

Lab. Sec. 2, VIII-IX M

Lab. Sec. 3, VI-VII T

Lab. Sec. 4, III-IV W

Lab. Sec. 5, VIII-IX W

Lab. Sec. 6, VIII-IX Th

6.‡‡ General Physics, Part I. Sound and Light. (Primarily for premedical students.) Lab. included. (2½ cred.; all; prereq. 4 or equiv.) Mr. Schmitt

Lect. and quiz, III MTWThF, 166Ph

All lab. sec. in 342Ph

Lab. Sec. 1, I-II W

Lab. Sec. 2, VI-VII M

Lab. Sec. 3, VI-VII Th

Lab. Sec. 4, VIII-IX F

7.‡‡ General Physics, Part I. Mechanics. (Primarily for students in the Institute of Technology and those majoring in physics, mathematics, or chemistry.) Lab. (one 2-hour period) included. (2½ cred.; all; prereq. registration in calculus.) Ar.

Lect. and quiz, V MTWThF, 150Ph

All lab. sec. in 153Ph

Lab. Sec. 1, III-IV M

Lab. Sec. 7, III-IV W

Lab. Sec. 2, VIII-IX M

Lab. Sec. 8, VIII-IX W

Lab. Sec. 3, III-IV T

Lab. Sec. 9, I-II Th

Lab. Sec. 4, VI-VII T

Lab. Sec. 10, III-IV Th

Lab. Sec. 5, VIII-IX T

Lab. Sec. 11, VI-VII Th

Lab. Sec. 6, I-II W

Lab. Sec. 12, III-IV F

Lab. Sec. 13, VI-VII F

9.‡‡ General Physics, Part I. Sound and Light. (Primarily for students in the Institute of Technology and those majoring in physics, mathematics, or chemistry.) Lab. (one 2-hour period) included. (2½ cred.; all; prereq. 8 or equivalent.) Mr. Weinberg

Lect. and quiz, II MTWThF, 150Ph

All lab. Sec. in 231Ph

Lab. Sec. 1, VI-VII M

Lab. Sec. 4, VI-VII W

Lab. Sec. 2, VIII-IX T

Lab. Sec. 5, VI-VII Th

Lab. Sec. 3, III-IV W

Lab. Sec. 6, VI-VII F

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

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

73. Intermediate Thermodynamics, Part I. (1½ cred.; all except Mech. Engineering; prereq. Phys. 7-8-9 and differential equations; lect. VI MWF; 145Ph.) Ar.
101. Theoretical Physics, Part I. An analytical survey of fundamental principles of mechanics, designed to supplement the general course and to prepare students for more specialized graduate courses. (2½ cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 106 or registration in 106; lect. II MTWThF; 145Ph.) Ar.
- 107.* Modern Physics. Lectures and readings on selected topics in contemporary fields of research. (3 cred.; jr., sr., grad.; prereq. a general course in physics, Math. 51; lect. IV MTWThF; 145Ph.) Ar.
- 144.‡ Electricity Measurements. An experimental course covering ballistic and current galvanometers, magnetic flux measurements, potentiometer methods, D.C. bridges, and audiofrequency A.C. bridges. (3 cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 51; lect. III MTWThF, 241Ph; lab. VI-IX TTh, 231Ph.) Mr. Wall
- 216.* Seminar in Contemporary Theoretical Physics. (3 cred.; grad.; prereq. Physics 193 or equiv. or permission of instructor; lect. I MTWThF; 143Ph.) Mr. Weinberg

SECOND TERM

2. Introduction to Physical Science. Electricity. Lectures and experimental demonstrations. (3 cred.; all; prereq. high school algebra and plane geometry; lect. I MTWThF; 150Ph.) Ar.
- 2a.‡ Introduction to Physical Science. Electricity. Laboratory included. May be applied toward group requirements in SLA. (4 cred.; all; prereq. high school algebra and plane geometry.) Ar.

Lect. I MTWThF, 150Ph

All lab. Sec. in 153Ph

Lab. Sec. 1, III-IV TTh

Lab. Sec. 2, VI-VII MW

Lab. Sec. 3, VIII-IX TTh

- 4.‡‡ General Physics, Part II. (See 4, Part I, first term.)
- 6.‡‡ General Physics, Part II. (See 6, Part I, first term.)
- 7.‡‡ General Physics, Part II. (See 7, Part I, first term.)
- 9.‡‡ General Physics, Part II. (See 9, Part I, first term.)
73. Intermediate Thermodynamics, Part II. (See 73, Part I, first term.)
101. Theoretical Physics, Part II. (See 101, Part I, first term.)
- 110.*‡ Modern Experimental Physics. Laboratory work. Vacuum gauges, mass spectroscopy, electronic tubes and associated circuits, radioactivity, Geiger counters, ionization of gases. (3 cred.; jr., sr., grad.; prereq. 144 or equivalent; VI-IX TWTh; 49Ph.) Mr. Schmitt
131. Geometrical Optics. Theory of mirrors, prisms, and lenses, diaphragms and brightness of images. Optical instruments. (3 cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 51; lect. III MTWThF; 241Ph.) Mr. Valasek
- 134.*‡ Experimental Optics. Measurements of indices of refraction, wave lengths, intensities, absorption, optical activity, focal lengths, and aberrations of lenses. (3 cred.; jr., sr., grad.; prereq. a general course in physics; lab. VI-IX MWF; 352Ph.) Mr. Valasek
- 136.*‡ Spectrum Analysis. Experiments with the spectrograph. Analysis of spectra. (3 cred.; jr., sr., grad.; prereq. a general course in physics; lab. VI-IX MWF; 352Ph.) Mr. Valasek

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

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

POLITICAL SCIENCE

FIRST TERM

1. American Government and Politics. (Part I of Political Science 1-2-3.) An examination of the fundamentals of American government, nature and growth of the Constitution, citizenship, individual rights and liberties, political parties, public opinion, nominations and elections. Special attention will be given to wartime changes and possible postwar developments, throughout the course. (3 cred.; all; no prereq.; I MTWThF; 207NH.) Miss Christensen
2. American Government and Politics. (Part II of Political Science 1-2-3.) Organization of national, state, and local governments; legislative, executive, and judicial branches and their procedures. (3 cred.; all; no prereq.; II MTWThF; 207NH.) Mr. Vines
7. Comparative European Government. An introduction to and analysis of the governments of England, France, Italy, Germany, and Soviet Russia. Structural features, parties, and politics; ideologies; fundamental principles. (3 cred.; all; no prereq.; II MTWThF; 211NH.) Mr. Turner
15. Elements of Political Science. The nature and functions of the state; sovereignty and liberty; constitutions, forms of government. (3 cred.; all; no prereq.; I MTWThF; 213NH.) Mr. Fluno
25. World Politics. An introduction to the field of contemporary international relations, the policies of the great powers today, nationalism, internationalism, Europe and the postwar settlement. (3 cred.; all; no prereq.; IV MTWThF; NHAud.) Mr. Mills
100. The Constitution and Social Change. The historical background of American constitutionalism; executive, legislative, and judicial influences in the "changing constitution"; judicial review and the industrial revolution; federal centralization; the growth of administrative agencies and their particular wartime significance; the New Deal and the Constitution. (3 cred.; jr., sr., grad.; no prereq.; III MTWThF; 209NH.) Mr. Latham
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; 209NH.) Mr. Ludwig
- 126.* Government and the Economic Order. An examination of the powers of national, state, and local governments in the United States to regulate the various forms of business enterprise. A survey of the policies with reference to selected topics such as the trust problem, public utilities, communication agencies, food and drug legislation, and others. Emphasis on the legislative background, legal and administrative problems, and judicial interpretation of the statutes. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; IV MTWThF; 209NH.) Mr. Latham
- 128.* Community Planning. Community development, population problems, economic base of community, use areas, circulation, housing, community facilities and services, public finance, planning procedures and aids, organization for planning. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; II MTWThF; 209NH.) Mr. Ludwig
129. Social Legislation and Social Institutions of Scandinavian Countries. (Same as Scandinavian Area Studies 120) (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; II MTWThF; 12F.) Mr. Andersson
- 137.* American Political Parties. A survey of the historical and contemporary activities of American political parties, the boss and the machine, nomination of candidates, party propaganda in elections, the services of parties in a democracy. (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci., or consent of instructor; IV MTWThF; 216NH.) Mr. Christensen

141. **European Governments: Theory and Practice.** An analysis of the theory and practice of European political institutions and parties, with special emphasis on those of England and France. Topics include: constitutional theory, sources of ideology and practice, governmental structure and procedure, social forces affecting politics, economics and social policies, political movements, e.g., conservatism, liberalism, labor socialism; administrative organization and problems, etc. (3 cred.; jr., sr., grad.; prereq. 6 cred. or 12 cred. in soc. sci.; II MTWThF; 111NH.) Mr. McClosky
145. **Government and Politics of Scandinavian Countries.** (Same as *Scandinavian Area Studies 145.*) (3 cred.; jr., sr., grad.; prereq. 7 or consent of instructor; IV MTWThF; 10F.) Mr. Andersson
155. **Government in Latin America.** An analysis of the factors that have conditioned constitutional and political organization in Latin America with emphasis on Argentina, Brazil, Chile, and Mexico. (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; II MTWThF; 213NH.) Mr. Christensen
- 161.* **Problems of Democracy.** The meaning of democracy; an examination and evaluation of the criticisms and defenses of democracy; an analysis of democratic institutions in America with special reference to the problems of postwar reconstruction. (3 cred.; jr., sr., grad., others with consent of instructor; III MTWThF; 216NH.) Mr. McClosky
180. **International Law.** Relation of international law to individuals, states, international community. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; I MTWThF; 216NH.) Ar.
- 195.* **Colonial Government and the Problems of Imperialism.** Motives of American, British, Dutch, French, and Spanish colonization; ancient and modern imperialism. (3 cred.; soph. with a "C" average, jr., sr., grad.; prereq. 6 cred. or consent of instructor; II MTWThF; 159TSF.) Mr. Mills
- 201.* **Seminar in American Government, Politics, and Administration.** General topic: Problems of Legislative Reorganization. (Cred. ar.; grad., and sr. with the consent of instructor; first meeting 12:00 noon first day of classes, ar.) Mr. Short
- 245.* **Seminar in Far Eastern Government and Politics.** General topic: Political Reorganization in Japan Today. (3 cred.; sr., grad.; prereq. 191-192-193 or consent of instructor; VII-VIII W; 212NH.) Mr. Quigley

SECOND TERM

1. **American Government and Politics.** (Part I of Political Science 1-2-3.) (See 1, first term.) (3 cred.; all; no prereq.; III MTWThF; 2P.) Mr. Vines
3. **American Government and Politics.** (Part III of Political Science 1-2-3.) The role and functions of American government in the spheres of business, social welfare, defense, and foreign affairs. (3 cred.; all; no prereq.; I MTWThF; 2P.) Mr. Fluno
7. **Comparative European Government.** (See 7, first term.) (3 cred.; all; no prereq.; II MTWThF; 2P.) Mr. Turner
15. **Elements of Political Science.** (See 15, first term.) (3 cred.; all; no prereq.; IV MTWThF; 308F.) Mr. Potter
27. **Foundations of International Relations.** A new approach to the study of international affairs, emphasizing geo-political and related factors. (3 cred.; no prereq.; all; II MTWThF; 113F.) Mr. Pfankuchen
- 124.* **Recent Social Legislation.** With special reference to the fields of social security, labor, housing, and health. (3 cred.; jr., sr., grad.; prereq. 6 cred.; II MTWThF; 14P.) Mrs. Jacobson
- 131.* **Public Administration.** Organization and Areas, Administrative Responsibility. (3 cred.; jr., sr., grad.; prereq. 6 cred.; III MTWThF; 113F.) Mr. Latham

160. American Political Thought. An examination and appraisal of the more significant political ideas of American statesmen, writers, and movements from colonial times to the present. Special attention is given to the spokesmen of the movements of protest, discontent, and revolution. (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; II MTWThF; 218P.) Mr. Hawkins
162. Recent Political Thought. An examination, comparison, and evaluation of the main ideas in the political philosophy of socialism, communism, fascism, and democracy. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; III MTWThF; 210P.) Mr. Hawkins
181. International Law. Jurisdictional problems; survey of principles developed in diplomatic practice, national courts, international adjudications. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; IV MTWThF; 210P.) Mr. Pfankuchen
- 202.* Seminar in American Government, Politics, and Administration. (Cred. ar.; grad. and sr. with consent of instructor; first meeting 12:00 noon first day of classes; ar. with instructor.) Mr. Latham

PSYCHOLOGY

FIRST TERM

- 1.† General Psychology. First half of 1-2. (3 cred.; soph., jr., sr.; no prereq.)
 Sec. 1, II MTWThF, 202WuH, Mr. MacCorquodale
 Sec. 2, IV MTWThF, 202WuH, Mr. Clark
- 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.)
 Sec. 1, I-II MTWThF, 110P, Mr. Dahlstrom, Mr. Gough
 Sec. 2, III-IV MTWThF, 110P, Mr. Gustad
 Sec. 3, III-IV MTWThF, 210P, Mr. Rosen, Mr. Simos
- 4-5.‡ Introductory Laboratory Psychology. Simple experiments illustrating the subject matter of contemporary psychology. Included are human and animal learning, visual experience, differences in artistic, musical, and other kinds of abilities, measurement of each student's personality traits, and reactions to advertisements. (4 cred.; soph., jr., sr.; prereq. gen. psy.)
 Sec. 1, I-II-III MTWThF, 211Psy, Mr. John
 Sec. 2, VI-VII-VIII MTWThF, 211Psy, Mr. Levine
65. Advanced General Psychology. An advanced treatment, with demonstrations, of motivation, emotion, perception, thinking, and learning, developing the relations of psychology to other fields such as the medical and social sciences. (3 cred.; jr., sr.; prereq. 1-2; IV MTWThF; 2P.) Mr. MacCorquodale
70. Principles of Psychological Measurement. The uses and limitations of the fundamental varieties of psychological measurement. Psychophysical methods, scaling methods, and psychometric methods. (3 cred.; jr., sr.; prereq. 1-2, 4-5; II MTWThF; 201WuH.) Mr. Clark
- 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.; jr., sr., grad.; prereq. Psy. 1-2, 4-5, or 5 cred. in statistics; II-III MTWThF; 115Psy.) Mr. Paterson

† To receive credit for this course the student must complete both 1 and 2.

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

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. gen. psy.; IV MTWThF; 115Psy.) Mr. Heron
- 130.†† Vocational and Occupational Psychology. Theory and practice in present-day vocational guidance. Theory and use of the *Dictionary of Occupational Titles* in the United States Employment Offices and in industry. Experience in interviewing and in giving, scoring, and interpreting vocational tests is provided. (3 cred.; jr., sr., grad.; prereq. 9 cred. in psy.; lect. IV MThF; lab. IV-V TW; 211Psy.) Mr. McClelland
- 135-136.‡ Occupational Counseling. Occupational information as used in counseling. Study of educational and occupational training opportunities and requirements. Psychological techniques in case analysis, interviewing, and remedial work. Types of vocational problems. Illustrative case histories. (4 cred.; sr., grad.; prereq. 9 cred. or consent of instructor; I MTWThF, II MT; 109Psy.) Mr. McClelland
- 144-145. Abnormal Psychology. A survey of ideas of causation and of techniques of treating abnormal behavior from early historical times; social aspects of the care and treatment of the abnormal in America. Consideration of the various psychoses and psychoneuroses and of social problems related to them. (6 cred.; jr., sr., grad.; prereq. gen. psy.; II-III MTWThF; MNHAud.) Mr. Bird
210. Research Problems. (Cred. ar.; grad. students only; students should register only with instructor's permission; hrs. ar.) Mr. Heron
- 250.* Topics in Psychology. Independent reading under tutorial supervision. May be in any field of psychology agreed upon by the student and the instructor. (Cred. usually 3, but may be ar.; hr. ar.) Mr. Heron

SECOND TERM

- 1-2. General Psychology. (See 1-2, first term.) (6 cred.; soph., jr., sr.; no prereq.)
 Sec. 1, I-II MTWThF, 110P, Mr. Dahlstrom, Mr. Gough
 Sec. 2, III-IV MTWThF, 110P, Mr. Rosen, Mr. Simos
- 2.† General Psychology. Second half of 1-2. (3 cred.; soph., jr., sr.; prereq. first half of 1-2)
 Sec. 1, II MTWThF, 202WuH, Mr. Gustad
 Sec. 2, IV MTWThF, 202WuH, Mr. Heron
- 4-5.‡ Introductory Laboratory Psychology. (See 4-5, first term.) (4 cred.; soph., jr., sr.; prereq. gen. psy.; I-II-III MTWThF; 211Psy.) Mr. John
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. gen. psy.; I MTWThF; 115Psy.) Mr. Heron
119. Psychology of Personality. A study of personality in normal individuals, especially from the standpoints of personality differences, the nature of personality processes, and the origins of personality characteristics. (3 cred.; jr., sr., grad.; prereq. 12 cred. in psy.; V MTWThF; 115Psy.) Mr. Leeper
154. Gestalt Psychology: Concepts and Data. A critical study of the experimental and theoretical contributions of the Gestalt psychologists, and of the implications of this work for other current viewpoints in psychology. (3 cred.; sr., grad.; prereq. 15 cred. in psy.; III MTWThF; 115Psy.) Mr. Leeper

† To receive credit for this course the student must complete both 1 and 2.

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

160. Psychology in Personnel Work. Psychology as applied to the selection and retention of a stabilized personnel in business. The standardized interview; principles and techniques of employment tests; methods of judging character qualities; the rating scale; personnel classification methods. (3 cred.; jr., sr., grad.; prereq. gen. psy.; IV MTWThF; 2P.) Mr. Longstaff
- 171-172. Introduction to Clinical Psychology. A survey of the methods of clinical psychology in relation to mental deficiency, special abilities and disabilities, behavior problems, personality disorders, and psychosomatic disturbances in adults and children. Students planning to use this course professionally should postpone taking it until they are in the graduate school. (6 cred.; sr., grad.; prereq. Psy. 144-145, either 125-126 or Ed. Psy. 120, or 5 cred. in statistics and 6 additional cred. in psy. or child welfare, or ed. psy.; I-II MTWThF; 109Psy.) Mr. Meehl
210. Research Problems. (Cred. ar.; grad. students only; students should register only with instructor's permission; hrs. ar.) Staff
- 250.* Topics in Psychology. Independent reading under tutorial supervision. May be in any field of psychology agreed upon by the student and the instructor. (Cred. usually 3, but may be ar.; hr. ar.) Staff

ROMANCE LANGUAGES

FIRST TERM

FRENCH

1. Beginning French. (5 cred.; all; no prereq.; I-II MTWThF; 206F.) Mr. Sullivan
2. Beginning French. (5 cred.; all; prereq. 1 or one year of high school French; I-II MTWThF; 207F.) Ar.
3. Intermediate French. (5 cred.; prereq. 2 or two years high school French; III-IV MTWThF; 206F.) Ar.
4. Intermediate French. (5 cred.; all; prereq. 3 or three years of high school French; III-IV MTWThF; 207F.) Mr. May, Mr. Sirich
53. French Composition. Equivalent to French 53f. Course conducted in French. (2 cred.; prereq. 3-4 or equiv.; I TWThF; 226F.) Miss Hampl
- 62.¶ French Phonetics. A scientific but simple and practical study of French pronunciation with special emphasis on correcting the pronunciation and intonation of individual students. Oral exercises and ear training. Meets four times weekly with two additional hours of laboratory under the instructor's guidance. Use of phonograph recordings and sound mirror. (3 cred.; jr., sr.; prereq. 4; IV TWThF; laboratory ar.; 204F.) Miss Hampl
111. French Romantic Drama. Equivalent to French 111w. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; I TWThF; 203F.) Mr. May
116. Seventeenth-Century French Literature: Corneille and Racine. Equiv. to French 116w. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; II TWThF; 203F.) Mr. May
118. Eighteenth-Century French Literature: Diderot. Equiv. to French 118f. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; III TWThF; 203F.) Mr. Sirich

SPANISH

1. Beginning Spanish. (5 cred.; all; no prereq.; I-II MTWThF; 305F.) Ar.
2. Beginning Spanish. (5 cred.; all; prereq. 1 or one year of high school Spanish; I-II MTWThF; 202F.) Ar.

¶ Graduate students may register under French 259.

3. Intermediate Spanish. (5 cred.; all; prereq. 1-2 or two years of high school Spanish; I-II MTWThF; 201F.) Mrs. Mills
4. Intermediate Spanish. (5 cred.; all; prereq. 3 or three years of high school Spanish; III-IV MTWThF; 201F.) Ar.
53. Spanish Composition. Equiv. to Spanish 53f. (2 cred.; jr., sr.; prereq. 3-4 or equiv.; III TWThF; 209½F.) Mrs. Mills
73. Latin-American Culture. (Course conducted in Spanish.) (2 cred.; jr., sr.; prereq. 4 or equiv.; I TWThF; 321F.) Mr. Cuneo
81. La Novela Ibero-Americana y los Problemas Sociales. (2 cred.; jr., sr.; prereq. 20 or 53 or permission of instructor; IV MTWF; 209F.) Mr. Cuneo
120. Spanish Literature: The Ballad. Equiv. to Spanish 120w. (2 cred.; jr., sr., grad.; prereq. 65-66-67 or 68-69 or equiv.; II TWThF; 226F.) Mr. Grismer
130. Spanish Literature: Cervantes. Equiv. to Spanish 130s. (2 cred.; jr., sr., grad.; prereq. 65-66-67 or 68-69 or equiv.; III TWThF; 209F.) Mr. Grismer
241. Spanish Philology. (2 cred.; grad.; IV TWThF; 203F.) Mr. Grismer

INSTITUTE OF SPANISH-AMERICAN STUDIES

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

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

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

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

The Institute will serve to give the teachers of Spanish an increased skill in teaching by analyzing (a) the problems and methods connected with it and (b) the different aids (games, films, phonograph records, publications, etc.) that are used to enliven the dull monotony of rules and sequences and the necessary rigidity of grammar.

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

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

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

All the activities of the Institute will be centered in a Spanish House conveniently located. Spanish will be spoken exclusively under the guidance of native teachers, not only in the organized groups but also during meals and at all informal gatherings. In addition to the regular classes, there will be programs of various sorts in Spanish, such as lectures, movies, games, songs, etc. All students registered in the Institute will be required to live at the Spanish House. However, students living in the Twin Cities will not be required to rent rooms in the house, but they will be required to take their meals there and to remain at the house until the activities of the day are over.

Arrangements are being made to meet the needs of (1) those who have completed a preliminary course in beginning Spanish, (2) intermediate, and (3) advanced students. The program carries ten quarter credits for the first group, nine for the other two groups. The students in Group 1 will register for Spanish 22, Practical Spanish; those in Group 2, for Spanish 56, Advanced Practical Spanish I; those in Group 3, for Spanish 66, Advanced Practical Spanish II; all 5-credit courses. The remaining credits will be arranged by consultation with the director.

The Institute will be staffed by Professor James A. Cuneo, director, and an adequate number of native assistants. The cost, without board and room, will be \$40. Applications should be mailed to the Spanish-American Institute, 225 Folwell, University of Minnesota, Minneapolis 14, on or before June 15, 1948. Registration will follow the usual Summer Session procedure as described elsewhere in this bulletin. Requests for further information should be addressed to the Dean of the Summer Session, 419 Administration Building, University of Minnesota, Minneapolis 14, Minnesota.

SECOND TERM

FRENCH

1. Beginning French. (5 cred.; all; no prereq.; I-II MTWThF; 206F.) Ar.
2. Beginning French. (5 cred.; all; prereq. 1 or one year of high school French; I-II MTWThF; 207F.) Ar.
- 3-4. Intermediate French. (5 cred.; all; prereq. 2 or 3 or two or three years of high school French; III-IV MTWThF; 206F.) Mr. Brackney
54. Practical French Conversation. Equiv. to French 54w. (2 cred.; prereq. 3-4 or equiv.; II TWThF; 226F.) Mr. Brackney
165. French Romantic Poetry. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; III TWThF; 202F.) Mr. Clefton

SPANISH

1. Beginning Spanish. (5 cred.; all; no prereq.; I-II MTWThF; 201F.) Ar.
2. Beginning Spanish. (5 cred.; all; prereq. Spanish 1 or one year of high school Spanish; I-II MTWThF; 202F.) Ar.
- 3-4. Intermediate Spanish. (5 cred.; all; prereq. 2 or 3 or two or three years of high school Spanish; III-IV MTWThF; 201F.) Ar.
54. Spanish Conversation. Equiv. to Spanish 54w. (2 cred.; jr., sr.; prereq. 3-4 or equiv.; III TWThF; 203F.) Ar.
112. Nineteenth-Century Spanish Drama. Equiv. to 112s. (2 cred.; jr., sr., grad.; prereq. 65-66-67 or 68-69 or equiv.; II TWThF; 203F.) Mr. Pattison
176. Twentieth-Century Spanish Poetry. Equiv. to 176s. (2 cred.; jr., sr., grad.; prereq. 65-66-67 or 68-69 or equiv.; III TWThF; 205F.) Mr. Pattison
250. Spanish Seminar: Blasco Ibanez. (2 cred.; grad.; IV TWThF; 203F.) Mr. Pattison

RUSSIAN

See Linguistics and Comparative Philology, page 38.

SCANDINAVIAN AREA STUDIES

FIRST TERM

1. Beginning Norwegian. (5 cred.; no prereq.; I-II MTWThF; 10F.) Ar.
7. Beginning Swedish. (5 cred.; no prereq.; III-IV MTWThF; 4F.) Ar.
13. Beginning Danish. (5 cred.; no prereq.; III-IV MTWThF; 8F.) Ar.
31. Beginning Finnish. (5 cred.; no prereq.; I-II MTWThF; 17F.) Ar.
120. Social Legislation and Social Institutions of the Scandinavian Countries. (3 cred.; jr., sr., grad.; prereq. Sociology 1 or consent of instructor; II MTWThF; 12F.) Mr. Andersson.
145. Government and Politics of the Scandinavian Countries. (Same as Political Science 145.) (3 cred.; jr., sr., grad.; prereq. Pol. Sci. 7 or consent of instructor; IV MTWThF; 10F.) Mr. Andersson
171. Ibsen. (Equiv. to Scandinavian 171f.) (3 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in literature; V MTWThF; 12F.) Mr. Haugen
199. Modern Methods of Teaching the Scandinavian Languages. This course will give an opportunity for students interested in teaching languages to study modern methods through lectures and demonstrations with special attention to those developed and perfected in the army intensive language training programs. (3 cred.; sr., grad.; prereq. advanced work in Danish, Norwegian, or Swedish; VII-VIII M and 2 hrs. ar.; 12F.) Mr. Haugen

SECOND TERM

2. Beginning Norwegian. (5 cred.; prereq. 1; I-II MTWThF; 10F.) Ar.
8. Beginning Swedish. (5 cred.; prereq. 7; III-IV MTWThF; 10F.) Ar.
14. Beginning Danish. (5 cred.; prereq. 13; III-IV MTWThF; 17F.) Ar.
32. Beginning Finnish. (5 cred.; prereq. 31; I-II MTWThF; 17F.) Ar.
113. Kierkegaard and Scandinavian Philosophy. (Same as Philosophy 113.) (3 cred.; jr., sr., grad.; prereq. one course from 50-51-52 or consent of instructor; II MTWThF; 305F.) Mr. Holmer
140. History of the Scandinavian Countries since 1814. (Same as History 140.) (3 cred.; jr., sr., grad.; no prereq.; III MTWThF; 4F.) Mr. Lindgren
162. The Contemporary Scandinavian Novel. A study of characteristic trends in Scandinavian life and thought in the twentieth century as expressed in the prose fiction of Sigrid Undset, Johannes V. Jensen, Olav Dunn, Hjalmar Bergman, Par Lagerkvist and others. (3 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in literature; I MTWThF; 12F.) Mr. Gustafson
172. Strindberg and the Drama in Revolt and Transition. A study of Strindberg as master of the naturalistic drama and as "the father of modernity" in the European and American theater since his day. (3 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in literature; III MTWThF; 12F.) Mr. Gustafson

SOCIAL SCIENCE

See General Studies, pages 30 and 31.

SOCIOLOGY AND SOCIAL WORK

FIRST TERM

SOCIOLOGY

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; the processes involved in social change and the

social problems that accompany social change. A survey of the fundamental social institutions such as the family and the church; the development and decline of social institutions; change in the institutional functions and social disorganization. (3 cred.; all; no prereq.)

Sec. 1, I MTWThF, 100NH, Mr. Brown Sec. 3, II MTWThF, 100NH, Mr. Johanson
 Sec. 2, I MTWThF, 107NH, Mr. Quammen Sec. 4, IV MTWThF, 102NH, Mr. Kyllonen

2. Individual and Minority Group Adjustment. The influence of social interaction on personality and personality adjustment with special reference to the family. The role of attitude and prejudice in relation to racial and other minority groups. Forms of social opposition including competition, class tension, and warfare. Adjustment of tensions and frustrations with relation to leadership, crowd behavior, and fascism. Social control and social change in relation to postwar objectives. (3 cred.; prereq. 1)
- Sec. 1, I MTWThF, 102NH, Mr. Fisher Sec. 2, II MTWThF, 102NH, Mr. Johnson
49. Social Problems. A survey course in contemporary social problems with especial emphasis on personal demoralization and social disorganization. (3 cred.; prereq. 1; III MTWThF; 100NH.) Mr. Kyllonen
53. Elements of Criminology. A general survey of the field of criminology. (3 cred.; jr., sr.; prereq. same as for 49; II MTWThF; 107NH.) Mr. Vold
91. Case Method Applied to 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. 50 or 51 or consent of major adviser; IV MTWThF; 107NH.) Miss Nagel
101. Social Organization. The organization and structure of social groups; basic culture patterns of economic, political, and social institutions. Integration and disintegration of social groups and institutions. Essentials of social dynamics. (3 cred.; jr., sr., grad.; prereq.¶; III MTWThF; 107NH.) Ar.
102. Contemporary Penology. An analysis of some of the more important developments in recent attempts at the treatment of criminals and the prevention of crime. (3 cred.; jr., sr., grad.; prereq.¶ I MTWThF; 106NH.) Mr. Vold
110. Rural Community Organization. A study of the historical evolution, ecological characteristics and demography of the rural community; the social processes, stratification, assimilation, conflict and cooperation as manifested in rural society. (3 cred.; jr., sr., grad.; prereq.¶; IV MTWThF; 106NH.) Mr. Nelson
114. Rural Social Institutions. Factors in the rural environment which condition the functioning of rural social institutions, including the family, school, church, local government, health and welfare. (3 cred.; jr., sr., grad.; prereq.¶; III MTWThF; 106NH.) Mr. Nelson
161. Social Aspects of Housing and Standards of Living. An analysis of the housing of the masses in relation to the problems arising in urban overcrowding, population distribution, and standard of living as affected by the distribution of national income, and the factors related to personal and social disorganization. (3 cred.; sr., grad.; prereq. Soc. 1 and 15 cred. in soc. sci., child welfare, ed., philos., or psych., or consent of instructor; II MTWThF; 106NH.) Ar.
- 200.* Seminar in Sociology. (2 cred.; ar.) Staff

¶ Sociology 1 and 15 credits in social science, child welfare, education, philosophy, or psychology, or consent of instructor.

SOCIAL WORK

- 213.‡ Field Work. Field practice in social work process under direct supervision. (3-6 cred.; grad.§) Mrs. Fenlason, Mrs. Scott, Miss Whitmore, Miss Winslow
221. Case Work II. A continuation of Case Work I emphasizing a critical analysis of the case work process and development of skills in case work method. (3 cred.; grad.; I-II TTh, II F; 103NH.) Mrs. Scott
222. Advanced Family Case Work. Case discussion focused primarily on treatment processes. (3 cred.; grad.; II MTWThF; 101NH.) Mrs. Fenlason
236. Personality Development As It Affects Social Case Work. A consideration of factors involved in personality development and how these factors aid case work practice. (3 cred.; grad.; I-II MW, I F; 103NH.) Dr. Sukov
237. Descriptive Neuropsychiatry. (The same as Psychiatry and Neurology 171, see page 95.) Dr. Aldrich, Dr. Baker
243. Behavior Problems in Younger Children. (The same as Child Welfare 140, see page 137.) Miss Templin
- 293.* Special Studies in Social Work. (1-9 cred.; grad.§) Mrs. Fenlason
- 300.* General Seminar in Social Work. (2 cred.; ar.) Staff

SECOND TERM

SOCIOLOGY

1. Introduction to Sociology. (See 1, first term.) (3 cred.; all; no prereq.)
 Sec. 1, I MTWThF, 157TSF, Mr. Brown
 Sec. 2, II MTWThF, 157TSF, Mr. Johanson
 Sec. 3, IV MTWThF, 157TSF, Mr. Quammen
2. Individual and Minority Group Adjustment. (See 2, first term.) (3 cred.; prereq. 1)
 Sec. 1, I MTWThF, 159TSF, Miss Garver
 Sec. 2, II MTWThF, 159TSF, Mr. Johnson
14. Rural Sociology. A study of rural and urban relationships. The position of an agricultural class in an industrial society. (3 cred.; prereq. 1; III MTWThF; 159TSF.) Miss Garver
100. Social Psychology. The social attitudes: their development and modification under social pressure; the interactions of individuals and groups. (3 cred.; jr., sr., grad.; prereq.¶; III MTWThF; 218P.) Mr. Kirkpatrick
113. Rural Community Analysis. Course intended primarily for prospective rural teachers and extension workers. Emphasis will be placed on methods of making field studies of communities. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in social science, and consent of instructor; IV MTWThF; 218P.) Mr. Marshall
119. The Family. With special reference to contemporary marriage problems. (3 cred.; jr., sr., grad.; prereq.¶; II MTWThF; 153TSF.) Mr. Kirkpatrick
160. Population Trends and Policies. This is a course emphasizing the cultural and social phases of population change as it is related to the institutional aspects of both rural and urban life. Population policy will be discussed with particular reference to the United States. (3 cred.; jr., sr., grad.; prereq.¶; II MTWThF; 253TSF.) Mr. Marshall
- 200.* Seminar in Sociology. (2 cred.; ar.) Staff

‡ A fee of \$3.50 is charged for this course. In Summer Session credit toward 210-211-212, 215-216-217, may be taken under number 213-214.

¶ Soc. 1 and 15 credits in social science, child welfare, education, philosophy, or psychology, or consent of instructor.

§ Admission on consultation with a social work adviser.

SOCIAL WORK

- 214.††† Field Work. Field practice in social work process under direct supervision. (3-6 cred.; grad.§) Mr. Kidneigh, Miss Whitmore, Miss Winslow
235. Introductory Psychiatry. A lecture course, including a discussion of mental hygiene, mental mechanisms, psychiatric history-taking, review of schools of psychiatry, classification of mental diseases. (See Psychiatry and Neurology 70, page 96.) (3 cred.; grad.) Dr. Hinckley
244. Behavior Problems in Older Children. (The same as Child Welfare 141, see page 138.) Miss Blodgett
260. The Child and the State. Development of the rights of the child in relation to parental rights as evidenced in child labor laws, the juvenile courts, adoption, aid to dependent children, the changing status of the illegitimate child, and public organization for more effective administration of laws relating to child dependency, delinquency, and neglect. (3 cred.; grad.; prereq. 200 or equiv.; III MTWThF; 14P.) Mr. Guilford
268. Public Welfare II. Historical development and existing functions of present-day public welfare services. (3 cred.; grad.; I MTWThF; 153TFS.) Mr. Guilford
275. Principles of Administration Applied to Social Work. A technical study of methods of planning, organizing and directing social agencies and of making the public aware of their work. (3 cred.; grad.; II MTWThF; 257TSF.) Mr. Kidneigh
- 293.* Special Studies in Social Work. (1-9 cred.; grad.§) Staff
- 300.* General Seminar in Social Work. (2 cred.; ar.) Staff

SPEECH

FIRST TERM

- Speech Clinic.††† For students who have particular speech defects such as deafness, cleft palate, stuttering, lisping, dialect. (Ar. with Mr. Henrikson, assistant director)
- 1.‡ Fundamentals of Speech. Development of basic skills in speech: voice and action, oral reading, discussion, extemporaneous speaking. (3 cred.; fr., soph., jr., sr.) Mr. Gilkinson and others
- Sec. 1, I MTWThF, 9F Sec. 3, VI MTWThF, 305F
Sec. 2, III MTWThF, 9F
- 2-3.‡ Fundamentals of Speech. (Continuation of Course 1 above.) Ar.
- Sec. 1, II MTWThF, 9F Sec. 2, IV MTWThF, 9F
- 32.‡† Beginning Acting. Creative and technical approaches. (3 cred.; soph., jr., sr.; prereq. 31; II MTWThF; 19Mu.) Mrs. Turner
- 65.‡ Radio Speech. Speech arts and psychology of the radio. Announcing and broadcasting. The radio speech. Radio drama and interpretative reading, voice diction, articulation, pronunciation, practice, exercises, projects, and reports on problems of appeal and audience response. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; VI MTWThF; 302MurH.) Mr. Ziebarth
- 66.‡† Radio Drama. A study of the historical development of radio drama, with an analysis of the various types of radio dramas including production, direction, and acting techniques. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6, 65 recommended; V MTWThF; 302MurH.) Mr. Newgord

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

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

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

†††† A fee of \$3.50 is charged for this course. 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.

- 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. 1-2-3 or 5-6, 65 recommended; II MTWThF; 306F.) Mr. Irwin
- 81.‡ Interpretative Reading. Esthetic theory of literature and of oral reading. Practice in reading for interpretation and mastery of technique. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; II MTWThF; 308F.) Mr. Thompson
- 92.‡‡ Stage Lighting. Theory and practice in applying methods and principles of lighting in the theater. (3 cred.; jr., sr.; prereq. 31; IV MTWThF; 9NH.) Mr. Andrus
101. Argumentation and Persuasion. Argumentation as a method of analysis of controversial questions, briefing, adaptive and nonadaptive persuasion; practice in speaking and writing. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, Psy. 1-2, 10 cred. in soc. sci.; VII MTWThF; 311F.) Mr. Howell
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. 1-2-3 or 5-6, and permission of instructor; III MTWThF; 311F.) Mr. Howell
- 112.‡‡ Stage Direction. Theory and practice in conducting rehearsals with special emphasis on the one-act play. (3 cred.; sr., grad.; prereq. 31, 32-33, 34, 91, 92, 93; IV MTWThF; 19Mu.) Mr. Kase
122. Introduction to Research. Graduate research in speech: selections of topics and methods of investigation. Required of all graduate majors in speech. (3 cred.; sr., grad.; prereq. 1-2-3 or 5-6, Psy. 1-2; VI MTWThF; 311F.) Mr. Gilkinson
125. Speech for the Deaf. Production of speech by the deaf through tactile, kinesthetic and visual control of motor speech skills. (3 cred.; prereq. permission of instructor; I MTWThF; 311F.) Miss Streng
127. Language Training for the Deaf. Linguistic problems inherent in deafness; reading, composition and special techniques of language construction. (3 cred.; prereq. permission of instructor; VI MTWThF; 306F.) Miss Streng
141. Voice Science. The anatomy and physiology of the speech mechanism. Consideration of respiration, articulation, and phonation. Practical applications to speech improvement. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, 67, Psy. 1-2 and 4-5; I MTWThF; 306F.) Mr. Irwin
- 151.§ (Ed.C.I. 140). The teaching of Speech. Orientation in problems of speech education. Review of studies. Teaching methods and special devices, voice recording, tests. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6 or equiv. or permission of instructor; III MTWThF; 305F.) Mr. Gilkinson
153. Problems of Hearing. A study of the hearing mechanism and its function, techniques of determining hearing acuity and electronic aids to hearing. (3 cred.; prereq. 1-2-3 or 5-6, 61, 67, Psy. 1-2, or permission of instructor; IV MTWThF; 306F.) Mr. Hedgecock
- 162-163.*‡¶ Speech Pathology. Neurologic basis of speech; stuttering and associated symptoms; relation of sidedness, handedness to speech disorders—a study of voice and articulation disorders; theories and treatment of all types of speech deviations. (6 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6 and 61, 67; II, III MTWThF; 113F.) Mr. Bryngelson

† To receive credit for any part of this course a student must complete both 162 and 163.

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

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

¶ Students intending to take Speech Pathology should take Phonetics the preceding quarter.

§ Carries undergraduate credit only in the College of Education.

- 164-165-166.* (Ed.C.I. 174-175-176.) Clinical Methods in Speech Pathology. (3 cred.; sr., grad.; prereq. 1-2-3 or 5-6, and 61, 67, 162-163, Ed. Psy. 142, consult instructor; ar.; ar.) Mr. Bryngelson
173. History of the Theater. A study and an analysis of the arts and crafts of the theater from Ibsen to the present day. Special reports and projects. (3 cred.; sr., grad.; prereq. 1-2-3 or 5-6, 31; III MTWThF; 111NH.) Mr. Thompson
- 181.* Readings in Speech. Directed readings and the preparation of reports on selected subjects. (Cred. ar.; jr., sr., grad.; prereq. 1-2-3 or 5-6 and 6 additional credits and consent of instructor; ar.; ar.) Staff
- 291.* Research in Special Problems. (Cred. ar.; ar.) Staff

SECOND TERM

- Speech Clinic.††† For students who have particular speech defects such as deafness, cleft palate, stuttering, lisping, dialect. (Ar. with Mr. Henrikson, assistant director)
- 1.† Fundamentals of Speech. (See 1, first term.) Mr. Gilkinson and others
Sec. 1, II MTWThF, 311F Sec. 2, IV MTWThF, 311F
- 2-3.‡ Fundamentals of Speech. (Continuation of Course 1 above.) Ar.
Sec. 1, I MTWThF, 311F Sec. 2, III MTWThF, 311F
- 33.‡‡ Beginning Acting. Creative and technical approaches. (3 cred.; soph., jr., sr.; prereq. 31, 32; II MTWThF; 19Mu.) Mrs. Turner
- 34.‡‡ Stagecraft. Construction and painting. (3 cred.; soph., jr., sr.; prereq. 31; VI-VII MTWThF; Stage, Mu.) Mr. Andrus
- 65.‡ Radio Speech. (See 65, first term.) (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; VI MTWThF; 302MurH.) Mr. Ziebarth
- 81.‡ Interpretative Reading. (See 81, first term.) (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; I MTWThF; 4Mu.) Mrs. Turner
- 82.‡ Interpretative Reading. (Continuation of Course 81 above.) (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; I MTWThF; 305F.) Mr. Bystrom
- 111.‡‡ Stage Direction. (See 112, first term.) (3 cred.; sr., grad.; prereq. 31, 32-33, 34, 91, 92, 93; IV MTWThF; 19Mu.) Mr. Whiting
- 181.* Readings in Speech. (See 181, first term.) (Cred. ar.; jr., sr., grad.; prereq. 1-2-3 or 5-6 and 6 additional credits and consent of instructor; ar.; ar.) Staff
- 291-292.* Research in Special Problems. (Cred. ar.; ar.) Staff
- See also Ed.C.I. 59. Speech in the Elementary Grades. Mrs. Chapman

SWEDISH

See Scandinavian Area Studies, page 53.

ZOOLOGY

FIRST TERM

- 1.†††† General Zoology. Structure, physiology, embryology, classification, and evolution of animals. (5 cred.; all; no prereq.)

Lect. V MTWThF, 06Bo, Mr. Olson

Lab. Sec. 1, III-IV MWF, II-III-IV TTh, 101, 107Z, ar.

Lab. Sec. 2, VI-VII MWF, VI-VII-VIII TTh, 101, 107Z, ar.

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

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

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

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

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

- 21.††† Histology. Microscopic structure of the tissues and organs. (5 cred.; soph., jr., sr.; prereq. Zool. 1-2-3 or equiv.; lect. I MTWTh, I-II F, 211Z; lab. II-III-IV MTWTh, 201Z.) Mr. Ringoen
- 22.‡‡ Comparative Anatomy. Comparative study of vertebrate systems, tracing the development of the various structures from the lowest forms to man. (5 cred.; soph., jr., sr.; prereq. Zool. 1-2-3 or equiv.; lect. II MTWThF, III F, 313Z.; lab. III MTWTh, IV MTWThF, V TThF, S3Z.) Mr. Eddy
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. Zool. 1-2-3 or 10 cred. in Botany; II MTWThF; Aud.Bo.) Ar.
- 197.* Problems. Advanced work in some special line. (3 cred. or more; jr., sr., grad.; prereq. Zool. 1-2-3 and special requirements; ar.) Ar.

SECOND TERM

- 2.‡§ General Zoology. Continuation of 1. (5 cred.; all; prereq. 1 or equiv.)

Lect. V MTWThF, 06Bo, Mr. Osterud

Lab. Sec. 1, III, IV MWF; II, III, IV TTh; 101, 107Z, ar.

Lab. Sec. 2, VI, VII MWF; VI, VII, VIII TTh; 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. Zool. 1-2-3 or equiv.; lect. VI MTWTh, VI, VII F, 211Z; lab. VII, VIII, IX MTWTh, 208Z.) Mr. Wallace
- 198.* Problems. Advanced work in some special line. (5 cred. or more; jr., sr., grad.; prereq. Zool. 1-2-3 and special requirements; ar.) Ar.
- For additional courses see Biological Station of the University of Minnesota, page 83.

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

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

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

§ 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 AND ARCHITECTURE§

An *asterisk* (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 18.)

AERONAUTICAL ENGINEERING

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

SUMMER QUARTER

1. Aeronautics. (Page 76) (3 cred.; prereq. M.&M. 24; V MWF; 105A.) Ar.
83. Stresses in Simple Structures. (Page 77) (4 cred.; prereq. M.&M. 128; lect. II MWF, 105A; lab. III-IV T; 9A.) Ar.
100. Aerodynamics. (Page 77) (3 cred.; prereq. A.E. 1 and M.&M. 25.) Ar.

Sec. 1, III MWF, 105A

Sec. 2, VII MWF, 105A

101. Aerodynamics. (Page 77) (3 cred.; prereq. A.E. 100; IV MWF; 105A.) Ar.
102. Aerodynamics. (Page 77) (3 cred.; prereq. A.E. 101; VI MWF; 105A.) Ar.
106. Advanced Aerodynamics. (Page 77) (3 cred.; prereq. A.E. 120 and 130; I MWF; 105A.) Ar.
115. Airplane Stresses. (Page 77) (3 cred.; prereq. A.E. 83; lect. IV TTh, 105A; lab. VI-VII M, 9A.) Ar.
117. Advanced Airplane Stresses. (Page 77) (3 cred.; prereq. A.E. 115 or 116; I MWF; 201Ex.) Mr. Wise
120. Airplane Design. (Page 77) (2 cred.; prereq. A.E. 83, 102 and M.&M. 128; II TTh; 105A.) Ar.
121. Airplane Design. (Page 77) (2 cred.; prereq. A.E. 120; III TTh; 105A.) Ar.
122. Airplane Design. (Page 77) (2 cred.; prereq. A.E. 121; I TTh; 105A.) Ar.
130. Aerodynamic Design Laboratory. (Page 77) (2 cred.; prereq. reg. in A.E. 120; II-IV WF; 9A.) Ar.
131. Airplane Design Laboratory. (Page 77) (2 cred.; prereq. reg. in A.E. 121; VIII-X M, VI-VIII Th; 9A.) Ar.
132. Airplane Design Laboratory. (Page 77) (2 cred.; prereq. reg. in A.E. 122; II-IV MTh; 9A.) Ar.
135. Airplane Static Test. (Page 77) (2 cred.; prereq. A.E. 121; lect. VI T, 105A; lab. II-IV T, 107A.) Ar.
190. Seminar. (Page 78) (1 cred.; prereq. A.E. 101; VII T; 105A.) Ar.
191. Seminar. (Page 79) (1 cred.; prereq. A.E. 190; VI Th; 105A.) Ar.

ARCHITECTURE

SUMMER QUARTER

DESIGN

Major and consulting critics: Mr. Cerny, Mr. McClure, Mr. Robert Jones, and Mr. Heath.

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

§ Page numbers in course description refer to the *Bulletin of the Institute of Technology* for 1946-49, where further information may be found.

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

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

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

- AD-I.‡ Architectural Design, Grade I. (Page 82) (5 cred.; prereq. Arch. 40 or equiv.) Ar.
- AD-II.‡ Architectural Design, Grade II. (Page 82) (5 cred.; prereq. AD-I.) Ar.
- AD-III.‡ Architectural Design, Grade III. (Page 82) (7 cred.; prereq. AD-II.) Ar.
- AD-IV.‡‡ Architectural Thesis. (Page 82) (15 cred.; prereq. AD-III.) Ar.

CIVIL ENGINEERING

SUMMER QUARTER

- 15. Surveying. (Page 91) (2 cred.; prereq. C.E. 14.) Mr. Peden
 - Sec. 1, lect. VI F, 22E; lab. II-IV W, 225E
 - Sec. 2, lect. III W, 22E; lab. VII-IX Th, 217E
 - Sec. 3, lect. IV T, 22E; lab. I-III T, 217E
- 16. Surveying. (Page 92) (2 cred.; prereq. C.E. 15.) Mr. Fant
 - Sec. 1, lect. VII W, 22E; lab. VII-X T, 217E
 - Sec. 2, lect. VII T, 22E; lab. I-IV M, 217E
- 21. Route Surveying. (Page 92) (2 cred.; prereq. C.E. 13.) Mr. Klingel, Mr. Peden
 - Sec. 1, lect. IV Th, 22E; lab. VII-X F, 225E
 - Sec. 2, lect. II W, 22E; lab. I-IV Th, 217E
 - Sec. 3, lect. IV F, 22E; lab. I-IV W, 229E
- 31-32-33. Stresses in Structures. (Page 92) (9 cred.; prereq. M.&M. 26 and Draw. 23; lect. I MTWThF, VI MTWTh, 22E; lab. II-IV MTF, 229E.) Mr. Cutts
- 38-39-41. Structural Design. (Arch.) (Page 92) (9 cred.; prereq. M.&M. 93; lect. I MTWThF, 227E; lab. II-V T, 201E.) Mr. Andersen
- 52. Highways and Pavements. (Page 93) (3 cred.; prereq. C.E. 51.) Mr. Kersten, Mr. Dalstrom

<ul style="list-style-type: none"> Lect. Sec. 1, VIII W, II Th, 215Ex Sec. 2, IV TW, 215Ex 	<ul style="list-style-type: none"> Lect. Sec. 3, VIII T, VII F, 215Ex Sec. 4, VI MTh, 215Ex
<ul style="list-style-type: none"> Lab. Sec. 1, I-IV M, 210Ex Sec. 2, I-IV T, 210Ex Sec. 3, I-IV W, 210Ex Sec. 4, I-IV Th, 210Ex Sec. 5, I-IV F, 210Ex Sec. 6, I-IV S, 210Ex 	<ul style="list-style-type: none"> Lab. Sec. 7, VII-X M, 210Ex Sec. 8, VII-X T, 210Ex Sec. 9, VII-X W, 210Ex Sec. 10, VII-X Th, 210Ex Sec. 11, VII-X F, 210Ex

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

‡‡ A fee of \$10 is charged for this course.

121. Railway Engineering. (Page 92) (3 cred.; prereq. C.E. 22.) Mr. Klingel
 Sec. 1, lect. III W, 215E; lab. I-III MT, 225E
 Sec. 2, lect. III M, 215E; lab. I-III WF, 217E
 Sec. 3, lect. VI W, 225E; lab. VII-IX MW, 225E
- 130-131-132. Structural Design. (Page 93) (7 cred.; prereq. C.E. 33 and M.&M. 128;
 lect. IV MTWF, 227E; lab. VII-X T, I-IV Th, 225E.) Mr. Wise
- 141-142. Reinforced Concrete (Page 93) (6 cred.; prereq. C.E. 33 and 130.) Mr. Graves
 Sec. 1, lect. V MTWF, 227E; lab. VII-IX Th, I-III F, 225E
 Sec. 2, lect. VI MTThF, 227E; lab. VII-IX MF, 217E
161. Hydrology
 162. Water Supply
163. Sewerage and Sewer Treatment. (Page 94) (9 cred.; prereq. M.&M. 129.) Mr. Schroepfer, Mr. Cornell
 Sec. 1, lect. VI MTWThF, II W, 215E; lab. VII-X MWF, 229E
 Sec. 2, lect. V MTWThF, II T, 215E; lab. VII-X TTh, I-IV Th, 229E
233. Advanced Foundations. (Page 93) (3 cred.; prereq. C.E. 132 and 147; hrs. ar.)
 Mr. Andersen
243. Dynamics of Structures. (Page 93) (3 cred.; prereq. C.E. 132; hrs. ar.) Mr. Wise
247. Seminar. (Page 93) (3 to 6 cred.; prereq. C.E. 131 and 142; hrs. ar.) Mr. Andersen

DRAWING AND DESCRIPTIVE GEOMETRY

SUMMER QUARTER

1. Engineering Drawing. (Page 96) (3 cred.; prereq. solid geometry.) Ar.
 Sec. 1, V-VI MTThF, 1E Sec. 2, VIII-IX MTWTh, 101E
2. Engineering Drawing. (Page 96) (3 cred.; prereq. Draw. 1.) Ar.
 Sec. 1, III-IV MTWF, 1E Sec. 2, VII-VIII MTWTh, 1E
3. Descriptive Geometry. (Page 96) (3 cred.; prereq. Draw. 2 and M.&M. 11.) Ar.
 Sec. 1, I-II MWThF, 101E Sec. 3, IX-X TWThF, 1E
 Sec. 2, VI-VII TWThF, 101E
7. Engineering Drawing. (Chem. and Chem.E.) (Page 96) (3 cred.; prereq. solid geometry; VI-IX TTh; 411C.) Ar.
8. Descriptive Geometry. (Chem. and Chem.E.) (Page 97) (3 cred.; prereq. Draw. 7; VI-IX TTh; 415C.) Ar.
10. Solid Geometry. (Page 97) (No cred.; no prereq.; VI MTTh; 203E.) Ar.
21. Drafting. (C.E.) (Page 97) (2 cred.; prereq. Draw. 3; III-IV MWF; 201E.) Ar.
22. Structural Detailing. (C.E.) (Page 97) (2 cred.; prereq. Draw. 21; V-VI MWF; 201E.) Ar.
23. Structural Detailing. (C.E.) (Page 97) (2 cred.; prereq. Draw. 22; VII-VIII MWF; 201E.) Ar.
26. Drafting. (E.E.) (Page 97) (2 cred.; prereq. Draw. 3; I-II MWF; 1E.) Ar.
28. Drafting. (A.E.) (Page 97) (2 cred.; prereq. Draw. 3; III-IV MWF; 101E.) Ar.
29. Drafting. (A.E.) (Page 97) (2 cred.; prereq. Draw. 28; I-II MWF; 201E.) Ar.
34. Lettering. (Page 97) (1 cred.; prereq. Draw. 1; VI T; 107E.) Ar.
55. Production Illustration. (Page 97) (2 cred.; prereq. Draw. 3; VI-VIII TTh; 201E.) Ar.
- G.E.70. Slide Rule. (Page 104) (1 cred.; prereq. reg. or cred. in M.&M. 11; VI Th; 335EE.) Ar.

ELECTRICAL ENGINEERING

FIRST TERM

15. Elements of Electrical Engineering. (Page 100) (3 cred.; prereq. E.E. 13; III MTWThF, VII M; 237EE.) Ar.
111. Junior Electrical Engineering. (Page 100) (3 cred.; E.E. 15 and 16.) Ar.
 Sec. 1, VIII MTWThF, IV T, 238EE Sec. 3, VII MTWThF, IV Th, 238EE
 Sec. 2, III MTWThF, V T, 238EE Sec. 4, II MTWThF, V F, 238EE
- 112.‡ Junior Electrical Engineering Laboratory. (Page 100) (1 cred.; prereq. reg. or cred. in E.E. 111.) Ar.
 Sec. 1, I-IV M, 107cEE Sec. 6, VII-X M, 107cEE
 Sec. 2, I-IV T, 107cEE Sec. 7, VII-X T, 107cEE
 Sec. 3, I-IV W, 107cEE Sec. 8, VII-X W, 107cEE
 Sec. 4, I-IV Th, 107cEE Sec. 9, VII-X Th, 107cEE
 Sec. 5, I-IV F, 107cEE Sec. 10, VII-X F, 107cEE
113. Junior Electrical Engineering. (Page 100) (3 cred.; prereq. E.E. 111 and 112) Ar.
 Sec. 1, I MTWThF, V W, 238EE Sec. 2, VI MTWThF, IV W, 238EE
- 114.‡ Junior Electrical Engineering Laboratory. (Page 100) (1 cred.; prereq. reg. or cred. in E.E. 113.) Ar.
 Sec. 1, I-IV T, 107bEE Sec. 4, VII-X T, 107bEE
 Sec. 2, I-IV F, 107bEE Sec. 5, VII-X W, 107bEE
 Sec. 3, VII-X M, 107bEE
115. Junior Electrical Engineering. (Page 100) (3 cred.; prereq. E.E. 113 and 114.) Ar.
 Sec. 1, II MTWThF, VII T, 237EE Sec. 2, VIII MTWThF, I F, 237EE
- 116.‡ Junior Electrical Engineering Laboratory. (Page 100) (1 cred.; prereq. reg. or cred. in E.E. 115.) Ar.
 Sec. 1, I-IV M, 107bEE Sec. 4, VII-X Th, 107bEE
 Sec. 2, I-IV W, 107bEE Sec. 5, VII-X F, 107bEE
 Sec. 3, I-IV Th, 107bEE
121. Senior Electrical Engineering. (Page 101) (3 cred.; prereq. E.E. 115, 116 and 119.) Ar.
 Sec. 1, IV MTWThF, I M, 237EE Sec. 2, VII MTWThF, III W, 335EE
- 122.‡‡ Senior Electrical Engineering Laboratory. (Page 101) (2 cred.; prereq. E.E. 116 and reg. in E.E. 121.) Ar.
 Sec. 1, I-IV M, 107aEE Sec. 4, VII-X T, 107aEE
 Sec. 2, I-IV T, 107aEE Sec. 5, VII-X W, 107aEE
 Sec. 3, I-IV F, 107aEE Sec. 6, VII-X F, 107aEE
123. Senior Electrical Engineering. (Page 101) (3 cred.; prereq. E.E. 121.) Ar.
 Sec. 1, II MTWThF, IV W, 139EE Sec. 2, VI MTWThF, IV T, 138EE
- 124.‡‡ Senior Electrical Engineering Laboratory. (Page 101) (2 cred.; prereq. reg. or cred. in E.E. 123.) Ar.
 Sec. 1, I-IV W, 107aEE Sec. 4, VII-X Th, 107aEE
 Sec. 2, VII-X M, 107aEE Sec. 5, VII-X F, 107aEE
 Sec. 3, VII-X T, 107aEE
125. Senior Electrical Engineering. (Page 101) (3 cred.; prereq. E.E. 123; VI MTWThF, I W; 237EE.) Ar.
- 126.‡‡ Senior Electrical Engineering Laboratory. (Page 101) (2 cred.; prereq. reg. or cred. in E.E. 125.) Ar.
 Sec. 1, I-IV M, 107aEE Sec. 3, VII-X M, 107aEE
 Sec. 2, I-IV Th, 107aEE

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

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

127. Transient Electrical Phenomena. (Page 101) (3 cred.; prereq. reg. in E.E. 121.) Ar.
Lect. V MTThF, 138EE Lab. Sec. 1, I-IV Th, 129EE

Sec. 2, VIII-IX MT, 129EE
Sec. 3, VII-X Th, 129EE

128.††† Transient Electrical Phenomena. (Page 101) (3 cred.; prereq. E.E. 127 and reg. in E.E. 123.) Ar.

Lect. III MTThF, 139EE

Lab. Sec. 1, I-IV W, 129EE
Sec. 2, VII-X W, 129EE
Sec. 3, VII-X F, 129EE

161-162. Electric and Radio Communication Part I. (Page 102) (3 cred.; prereq. reg. or cred. in E.E. 121.) Ar.

Lect. V MTWF, 237EE

Lab. Sec. 1, I-IV Th, 317EE
Sec. 2, I-IV F, 317EE
Sec. 3, VII-X M, 317EE

Lab. Sec. 4, VII-X T, 317EE
Sec. 5, VII-X Th, 317EE

163-167. Electric and Radio Communication Part I. (Page 102) (3 cred.; prereq. E.E. 161-167). Ar.

Lect. Sec. 1, I MWThF, 138EE
Sec. 2, VII MWThF, 138EE

Lab. Sec. 1, I-IV M, 312EE
Sec. 2, I-IV Th, 312EE
Sec. 3, I-IV F, 312EE
Sec. 4, VII-X M, 312EE

Lab. Sec. 5, VII-X T, 312EE
Sec. 6, VII-X W, 312EE
Sec. 7, VII-X Th, 312EE

163-169. Electric and Radio Communication Part I. (Page 102) (3 cred.; prereq. E.E. 162-168.) Ar.

Lect. VIII TWThF, 138EE

Lab. Sec. 1, I-IV T, 308EE
Sec. 2, I-IV F, 308EE

SECOND TERM

16.‡ Elements of Electrical Engineering Laboratory. (Page 100) (2 cred.; prereq. E.E. 14 and reg. or cred. in E.E. 16.) Ar.

Sec. 1, I-III TTh, 21EE
Sec. 2, VII-IX MW, 21EE

Sec. 3, VII-IX TTh, 21EE

109. Electric and Magnetic Fields. (Page 100) (3 cred.; prereq. E.E. 15 and 16.) Ar.

Sec. 1, VIII MTWThF, IV T, 238EE
Sec. 2, III MTWThF, V T, 238EE

Sec. 3, VII MTWThF, IV Th, 238EE
Sec. 4, II MTWThF, V F, 238EE

117. Engineering Electronics. (Page 100) (3 cred.; prereq. E.E. 111 and 112.) Ar.

Sec. 1, I MTWThF, V M, 238EE

Sec. 2, VI MTWThF, III T, 237EE

118.‡ Engineering Electronics Laboratory. (Page 101) (1 cred.; prereq. reg. or cred. in E.E. 117.) Ar.

Sec. 1, VII-X M, 227EE
Sec. 2, VII-X T, 227EE
Sec. 3, VII-X W, 227EE

Sec. 4, I-IV W, 227EE
Sec. 5, I-IV F, 227EE

119. Engineering Electronics. (Page 100) (3 cred.; prereq. E.E. 117.) Ar.

Sec. 1, II MTWThF, VII T, 237EE

Sec. 2, VIII MTWThF, IV W, 237EE

120.‡ Engineering Electronics Laboratory. (Page 101) (1 cred.; prereq. reg. or cred. in E.E. 119.) Ar.

Sec. 1, I-IV M, 227EE
Sec. 2, I-IV T, 227EE
Sec. 3, I-IV Th, 227EE

Sec. 4, VI-IX Th, 227EE
Sec. 5, VI-IX F, 227EE

132. Electrical Design. (Page 101) (3 cred.; prereq. reg. in E.E. 121; VII MTWThF, IV M; 139EE.) Ar.

‡ A fee of \$1 is charged for this course.
††† A fee of \$3 is charged for this course.

134. Electrical Design. (Page 101) (3 cred.; prereq. E.E. 132; III MTWThF, V W; 138EE.) Ar.
136. Electrical Design. (Page 101) (3 cred.; prereq. E.E. 134; VIII MTWThF, V T; 139EE.) Ar.
139. Power Systems. (Page 101) (3 cred.; prereq. E.E. 138; VI MTWThF, IV F; 238EE.) Ar.
- 164.†† Communication Circuits. (Page 102) (4 cred.; prereq. reg. or cred. in E.E. 121.) Ar.

Lect. Sec. 1, VII MTWTh, 339EE	
Sec. 2, II MTWF, 138EE	
Lab. Sec. 1, I-IV T, 307EE	Lab. Sec. 4, VII-X W, 307EE
Sec. 2, I-IV F, 307EE	Sec. 5, VII-X F, 307EE
Sec. 3, VII-X M, 307EE	

- 165.†† Communication Circuits. (Page 102) (4 cred.; prereq. E.E. 164.) Ar.

Lect. Sec. 1, III MWThF, 237EE	
Sec. 2, VIII MWThF, 339EE	
Lab. Sec. 1, I-IV W, 307EE	Lab. Sec. 3, VII-X T, 307EE
Sec. 2, I-IV Th, 307EE	Sec. 4, VII-X Th, 307EE

- 166.†† Communication Circuits. (Page 102) (4 cred.; prereq. E.E. 165.) Ar.

Lect. V TWThF, 339EE	Lab. Sec. 1, I-IV M, 307EE
	Sec. 2, VI-IX M, 307EE

- 161-162. Electric and Radio Communications. Part II. (Page 102) (3 cred.; prereq. E.E. 161-162, Part I.) Ar.

Lect. V MTWF, 237EE	
Lab. Sec. 1, I-IV Th, 317EE	Lab. Sec. 4, VII-X T, 317EE
Sec. 2, I-IV F, 317EE	Sec. 5, VII-X Th, 317EE
Sec. 3, VII-X M, 317EE	

- 163-167. Electric and Radio Communication. Part II. (Page 102) (3 cred.; prereq. E.E. 162-167, Part I.) Ar.

Lect. Sec. 1, I MWThF, 138EE	
Sec. 2, VII MWThF, 138EE	
Lab. Sec. 1, I-IV M, 312EE	Lab. Sec. 5, VII-X T, 312EE
Sec. 2, I-IV Th, 312EE	Sec. 6, VII-X W, 312EE
Sec. 3, I-IV F, 312EE	Sec. 7, VII-X Th, 312EE
Sec. 4, VII-X M, 312EE	

- 163-169. Electric and Radio Communication. Part II. (Page 102) (3 cred.; prereq. E.E. 163-169, Part I.) Ar.

Lect. VII TWThF, 138EE	Lab. Sec. 1, I-IV T, 308EE
	Sec. 2, I-IV F, 308EE

SUMMER QUARTER

- 38 or 45. Electrical Engineering Survey. (Page 101) (3 cred.; prereq. E.E. 37 or 44.) Ar.

Lect. IV MF, 335EE	
Lab. Sec. 1, I-II T, 207cEE	Lab. Sec. 3, III-IV Th, 207cEE
Sec. 2, VIII-IX M, 207cEE	Sec. 4, VII-VIII Th, 207cEE

47. Electrical Engineering Survey. (Page 101) (3 cred.; prereq. E.E. 46.) Ar.

Lect. I TTh, 237EE	Lab. Sec. 1, VI-VII T, 207bEE
	Sec. 2, VIII-IX W, 207bEE

†† A fee of \$4 is charged for this course.

ENGLISH (ENGINEERING)

SUMMER QUARTER

- 4. Written and Spoken Communication. (Page 103) (3 cred.; prereq. placement test.) Ar.
 Sec. 1, III MWF, 107E Sec. 3, VII MTTh, 107E
 Sec. 2, II MWF, 107E
- 5. Written and Spoken Communication. (Page 103) (3 cred.; prereq. Eng. 4.) Ar.
 Sec. 1, II MWF, 106E Sec. 3, IV MWF, 107E
 Sec. 2, VI MWF, 106E
- 6. Written and Spoken Communication. (Page 103) (3 cred.; prereq. Eng. 5.) Ar.
 Sec. 1, V MWF, 107E Sec. 3, I MWF, 106E
 Sec. 2, VIII TWF, 107E
- 9. Technical Discussions. (Page 104) (3 cred.; prereq. Eng. 6.) Ar.
 Sec. 1, I MWF, 107E Sec. 2, VI MWF, 107E

GENERAL ENGINEERING

SUMMER QUARTER

- 70. Slide Rule. (See Drawing and Descriptive Geometry, G.E. 70, page 62.)
- 110. Patents for Engineers and Scientists. (3 cred.; jr., sr., grad.; I MWF; ar.) Mr. Kegan.

MATHEMATICS AND MECHANICS

SUMMER QUARTER

- 9. Higher Algebra. (Page 107) (No cred.; no prereq.; I MTWThF; 206E.) Ar.
- 11. College Algebra. (Page 107) (5 cred.; prereq. M.&M. 9 or equiv.) Ar.
 Sec. 1, I MTWThF, 203E Sec. 2, I MTWThF, 104E
- 12. Trigonometry. (Page 107) (5 cred.; prereq. M.&M. 11; I MTWThF; 205E.) Ar.
- 13. Analytic Geometry. (Page 108) (5 cred.; prereq. M.&M. 12.) Ar.
 Sec. 1, IV MTWThF, 203E Sec. 2, V MTWThF, 106E
- 24. Calculus I: Differential. (Page 108) (5 cred.; prereq. M.&M. 13.) Ar.
 Sec. 1, VII MTWThF, 106E Sec. 3, II MTWThF, 104E
 Sec. 2, II MTWThF, 205E
- 25. Calculus II: Integral. (Page 108) (5 cred.; prereq. M.&M. 24.) Ar.
 Sec. 1, III MTWThF, 203E Sec. 2, VII MTWThF, 104E
- 26. Technical Mechanics: Statics. (Page 108) (5 cred.; prereq. M.&M. 25.) Ar.
 Sec. 1, VI MTWThF, 4E Sec. 3, V MTWThF, 203E
 Sec. 2, VI MTWThF, 3E Sec. 4, V MTWThF, 205E
- 80. Differential Equations. (Page 108) (3 cred.; prereq. M.&M. 25.) Ar.
 Sec. 1, IV MWF, 205E Sec. 2, I MWF, 5E
- 84. Technical Mechanics. (Chem., Chem.E. and Prebus.) (Page 108) (5 cred.; prereq. M.&M. 25; II MTWThF; 206E.) Ar.
- 85. Strength of Materials. (E.E., Chem.E. and Prebus.) (Page 109) (3 cred.; prereq. M.&M. 26 or 84.) Ar.
 Sec. 1, III MWF, 206E Sec. 2, V MWF, 206E
- 86. Fluid Mechanics. (Aero.E., E.E. and Chem.E.) (Page 109) (3 cred.; prereq. M.&M. 26 or 84.) Ar.
 Sec. 1, VI MWF, 5E Sec. 3, VII MWF, 227E
 Sec. 2, IV MWF, 215E

87. Materials Testing Laboratory. (E.E., Chem.E. and Prebus.) (Page 109) (1 cred.; prereq. reg. or cred. in M.&M. 85.) Ar.
 Sec. 1, VI-VII M, Ex
 Sec. 2, III-IV T, Ex
 Sec. 3, I-II W, Ex
 Sec. 4, VIII-IX W, Ex
- 92-93. Mechanics and Strength of Materials. (Arch.) (Pages 108-109) (8 cred.; prereq. M.&M. 91; I-II MTWF; 304E.) Ar.
127. Technical Mechanics: Dynamics. (Page 109) (5 cred.; prereq. M.&M. 26.) Ar.
 Sec. 1, VI MTWThF, 206E
 Sec. 2, VII MTWThF, 206E
 Sec. 3, VII MTWThF, 205E
 Sec. 4, VII MTWThF, 203E
 Sec. 5, VI MTWThF, 104E
128. Strength of Materials. (Page 109) (5 cred.; prereq. M.&M. 26.) Ar.
 Sec. 1, III MTWThF, 227E
 Sec. 2, VI MTWThF, 205E
129. Fluid Mechanics. (Page 109) (4 cred.; prereq. M.&M. 26; I MTThF; 3E.) Ar.
130. Fluid Mechanics. (Page 109) (5 cred.; prereq. M.&M. 26.) Ar.
 Sec. 1, II MTWThF, 227E
 Sec. 2, IV MTWThF, 206E
141. Materials Testing Laboratory. (Page 109) (1 cred.; prereq. reg. or cred. in M.&M. 128.) Ar.
 Sec. 1, I-II T, Ex
 Sec. 2, I-II F, Ex
 Sec. 3, VI-VII W, Ex
 Sec. 4, VII-VIII Th, Ex
143. Hydraulics Laboratory. (Page 110) (1 cred.; prereq. reg. or cred. in M.&M. 86, 129 or 130.) Ar.
 Sec. 1, III-IV M, Ex
 Sec. 2, VII-VIII M, Ex
 Sec. 3, VII-VIII W, Ex
150. Calculus III: Intermediate. (Page 108) (3 cred.; prereq. M.&M. 25; II MWF; 203E.) Ar.
153. Calculus V: Special Topics in Advanced Calculus. (Page 108) (3 cred.; prereq. M.&M. 152; II MWF; 5E.) Ar.
155. Vector Analysis and Dyadics. (Page 108) (3 cred.; prereq. M.&M. 154; IV MWF; 104E.) Ar.

MECHANICAL ENGINEERING

SUMMER QUARTER

- 1.‡ Metal Working. (Prebus.) (Page 110) (2 cred.; no prereq.; lect. VII T, V W, 202ME; lab. II-IV Th, Forge Shop.) Ar.
- 3.‡ Machine Woodworking (Ind.Ed.) (Page 110) (2 cred.; prereq. M.E. 2; hrs. ar.) Ar.
- 6.‡ Machine Shop. (Aero.E., Mining, and Met.E.) (Page 110) (2 cred.; no prereq.; lect. I WF, 153ME; lab. V-VII T, ME Machine Shop.) Ar.
- 8.‡ Machine Shop. (E.E. and Prebus.) (Page 110) (2 cred.; prereq. Draw. 2 and In.Chem. 2, 5, 7, or 10.) Ar.
 Lect. VII TTh, 153ME
 Lab. Sec. 1, I-III W, ME Machine Shop
 Sec. 2, VIII-X T, ME Machine Shop
11. Materials and Processing I. (Page 110) (2 cred.; prereq. Draw. 2 and In.Chem. 2, 5, 7, or 10; III MF; 202ME.) Ar.
- 12.‡ Materials and Processing II (Page 110) (2 cred.; prereq. (M.E.) In.Chem. 1 or 4 and reg. or cred. in M.E. 11, (Mines, Met.) In.Chem. 1 or 4 and jr., (Prebus.) In.Chem. 1 or 4 and M.E. 1 or 4.) Ar.
 Lect. II MW, 153ME
 Lab. Sec. 1, I-III T, Foundry
 Sec. 2, VIII-X Th, Foundry

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

- 13.‡ Materials and Processing III. (Page 110) (2 cred.; prereq. (M.E.) In.Chem. 2 or 5, Draw. 2 and reg. or cred. in M.E. 11, (Mines, Met.) In.Chem. 2 or 5 and jr.; lect. I TTh, 153ME; lab. VIII-X Th, Forge.) Ar.
- 14.‡ Materials and Processing IV. (Page 110) (2 cred.; prereq. reg. or cred. in M.E. 11.) Ar.
- Lect. IV TTh, 153ME
- Lab. Sec. 1, VII-IX M, ME Machine Shop
Sec. 2, I-III T, ME Machine Shop
Sec. 3, VII-IX F, ME Machine Shop
- 15.‡ Materials and Processing V. (Page 110) (2 cred.; prereq. M.E. 14.) Ar.
- Lect. Sec. 1, V MF, 153ME
Sec. 2, III MF, 153ME
- Lab. Sec. 1, II-IV M, ME Machine Shop
Sec. 2, I-III Th, ME Machine Shop
Sec. 3, VIII-X W, ME Machine Shop
Sec. 4, VII-IX Th, ME Machine Shop
- 16.‡ Materials and Processing VI. (Page 110) (2 cred.; prereq. M.&M. 26 and M.E. 11, 12, 13, and 14.) Ar.
- Lect. Sec. 1, I TTh, 202ME
Sec. 2, VII MTh, 202ME
- Lab. Sec. 1, I-III M, Woodshop
Sec. 2, I-III T, Woodshop
Sec. 3, VII-IX M, Woodshop
Sec. 4, VII-IX W, Woodshop
Sec. 5, VII-IX F, Woodshop
- 17.‡ Materials and Processing VII. (Page 111) (2 cred.; prereq. M.E. 11, 12, 13, and 14.) Ar.
- Lect. Sec. 1, III TTh, 202ME
Sec. 2, VI WF, 202ME
- Lab. Sec. 1, VII-IX M, Foundry
Sec. 2, V-VII Th, Foundry
Sec. 3, VII-IX F, Foundry
20. Elementary Machine Design. (Page 111) (2 cred.; prereq. Draw. 3.) Ar.
- Sec. 1, V-VII TTh, 151ME
- Sec. 2, VIII-X MF, 151ME
21. Kinematics. (Page 111) (2 cred.; prereq. Draw. 3.) Ar.
- Sec. 1, I-III TTh, 151ME
Sec. 2, I-III MW, 151ME
- Sec. 3, VIII-X TTh, 151ME
22. Mechanism. (Page 111) (3 cred.; prereq. M.E. 21 and M.&M. 24.) Ar.
- Lect. Sec. 1, III WF, 251ME
Sec. 2, VI TTh, 251ME
- Lab. Sec. 1, I-III M, 252ME
Sec. 2, I-III Th, 252ME
23. Dynamics of Machinery. (Page 111) (3 cred.; prereq. M.&M. 127 and M.E. 22.) Ar.
- Lect. Sec. 1, IV MW, 251ME
Sec. 2, V TTh, 251ME
- Lab. Sec. 1, VII-IX T, 252ME
Sec. 2, I-III F, 252ME
24. Elements of Machine Design. (Page 111) (3 cred.; prereq. M.&M. 128.) Ar.
- Lect. Sec. 1, III WF, 254ME
Sec. 2, III TTh, 251ME
- Lab. Sec. 1, V-VII W, 151ME
Sec. 2, VII-IX M, 252ME
26. Kinematics and Mechanism. (E.E., Aero.E., and Ag.E.) (Page 111) (3 cred.; prereq. M.&M. 24.) Ar.
- Sec. 1, III MWF, 154ME
Sec. 2, V MWF, 251ME
- Sec. 3, VIII MWF, 251ME
33. Mechanical Engineering Laboratory. (Page 33) (2 cred.; prereq. reg. or cred. in M.E. 131.) Ar.
- Lect. V T, 154ME
- Lab. Sec. 1, VII-IX T, 160ME
Sec. 2, I-III T, 160ME
34. Mechanical Engineering Laboratory II. (Page 112) (2 cred.; prereq. M.E. 33.) Ar
- Lect. Sec. 1, II Th, 154ME
Sec. 2, VIII M, 154ME
- Lab. Sec. 1, I-III W, 160ME
Sec. 2, I-III Th, 160ME
Sec. 3, VII-IX W, 160ME
Sec. 4, VII-IX Th, 160ME

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

35. Mechanical Engineering Laboratory III. (Page 113) (2 cred.; prereq. M.E. 34 and reg. or cred. in M.E. 141.) Ar.
 Lect. V M, 154ME
 Lab. Sec. 1, V-VII T, Ex
 Sec. 2, VIII-X W, Ex
 Sec. 3, V-VII Th, Ex
40. Heat Engines. (E.E.) (Page 113) (3 cred.; prereq. Phys. 7.) Ar.
 Lect. Sec. 1, VI TTh, 154ME
 Sec. 2, IV TTh, 154ME
 Lab. Sec. 1, I-III T, Ex
 Sec. 2, I-III Th, Ex
 Sec. 3, VIII-X M, Ex
 Sec. 4, VIII-X T, Ex
 Sec. 5, VIII-X Th, Ex
 Sec. 6, VIII-X F, Ex
41. Heat Engines. (E.E.) (Page 113) (3 cred.; prereq. M.E. 40.) Ar.
 Lect. V TTh, 110Ex
 Lab. Sec. 1, II-IV M, Ex
 Sec. 2, VIII-X Th, Ex
 Sec. 3, VIII-X F, Ex
55. Internal Combustion Engines. (E.E.) (Page 114) (3 cred.; prereq. M.E. 41.) Ar.
 Lect. V TTh, 101 OSL
 Lab. Sec. 1, VIII-X T, OSL
 Sec. 2, II-IV F, OSL
121. Machine Design. (Page 112) (2 cred.; prereq. M.E. 24.) Ar.
 Lect. Sec. 1, IV T, 251ME
 Sec. 2, VII F, 251ME
 Sec. 3, I Th, 251ME
 Lab. Sec. 1, VII-IX T, 255ME
 Sec. 2, VIII-X F, 255ME
 Sec. 3, II-IV Th, 255ME
131. Thermodynamics. (Page 113) (3 cred.; prereq. M.&M. 25 and Phys. 8.) Ar.
 Sec. 1, VII MWF, 254ME
 Sec. 2, I MWF, 254ME
 Sec. 3, IV MWF, 254ME
132. Thermodynamics. (Page 113) (3 cred.; prereq. M.E. 131.) Ar.
 Sec. 1, II MWF, 254ME
 Sec. 2, V MWF, 254ME
141. Heat Power Engineering. (Page 113) (3 cred.; prereq. M.E. 132.) Ar.
 Sec. 1, I MWF, 154ME
 Sec. 2, IV MWF, 154ME
149. Advanced Steam Laboratory. (Page 114) (2 cred.; prereq. M.E. 35, 132 and reg. or cred. in M.E. 141; VII-X T; Ex.) Ar.
150. Internal Combustion Engines. (Page 114) (4 cred.; prereq. M.E. 131.) Ar.
 Lect. Sec. 1, III MTTh, 201 OSL
 Sec. 2, IV MWF, 101 OSL
 Lab. Sec. 1, V-VII Th, OSL
 Sec. 2, I-III T, OSL
- 150A. Internal Combustion Engines. (Aero.E.) (Page 114) (4 cred.; prereq. M.E. 131 or Phys. 73; III MTTh, VI F; 101 OSL.) Ar.
151. Advanced Internal Combustion Engines. (Page 114) (3 cred.; prereq. M.E. 150; VI MWF; 201 OSL.) Ar.
- 151A. Advanced Internal Combustion Engines. (Aero.E.) (Page 114) (2 cred.; prereq. M.E. 150A or 150; VI MW; 101 OSL.) Ar.
154. Design of Internal Combustion Engines. (Page 115) (2 cred.; prereq. M.E. 121 and 150; I-III WF; 208 OSL.) Ar.
- 154A. Design of Airplane Engines. (Page 115) (2 cred.; prereq. M.E. 26, and 150 or 150A; I-III WF; 208 OSL.) Ar.
155. Design of Internal Combustion Engines. (Page 115) (2 cred.; prereq. M.E. 154; I-III MT; 208 OSL.) Ar.
157. Gas Turbines and Jet Propulsion Power Plants. (Page 115) (3 cred.; prereq. M.E. 150 or 150A; V MWF; 201 OSL.) Ar.
158. Auto Engine Testing. (Page 115) (2 cred.; prereq. M.E. 150 or reg. or cred. in M.E. 150A.) Ar.
 Sec. 1, VII-IX Th, VI-VIII F, OSL
 Sec. 2, VII-IX TW, OSL

159. Internal Combustion Engine Laboratory. (Page 115) (2 cred.; prereq. reg. or cred. in M.E. 150; VII-X M; OSL.) Ar.
160. Heating and Ventilation. (Page 116) (3 cred.; prereq. M.&M. 127, 129 or 130 and M.E. 131.) Ar.
 Sec. 1, II MWF, 110Ex Sec. 2, VI MWF, 110Ex
161. Heating, Ventilation, and Air Conditioning Design. (Page 116) (2 cred.; prereq. M.E. 160; VIII-X MTh; 255ME.) Ar.
162. Heating, Ventilation, and Air Conditioning Design. (Page 116) (2 cred.; prereq. M.E. 161; I-III WF; 255ME.) Ar.
169. Heating and Ventilation Laboratory. (Page 116) (2 cred.; prereq. M.E. 35 and reg. or cred. in M.E. 160; VII-X W; Ex.) Ar.
171. Elements of Industrial Engineering and Management. (Page 115) (3 cred.; prereq. M.E. 15, 16, and 17.) Ar.
 Sec. 1, IV MWF, 202ME Sec. 2, II MWF, 202ME
172. Industrial Plants. (Page 116) (2 cred.; prereq. M.E. 171 and reg. or cred. in M.E. 174; lect. VI T, 202ME; lab. VII-IX T, 205ME.) Ar.
174. Motion and Time Study Laboratory. (Page 116) (2 cred.; prereq. M.E. 171; lect. VII F, 202ME; lab. VIII-X F, 205ME.) Ar.
180. Refrigeration. (Page 117) (3 cred.; prereq. M.E. 132 and reg. or cred. in M.E. 160.) Ar.
 Sec. 1, I MWF, 110Ex Sec. 2, III MWF, 110Ex
189. Refrigeration Laboratory. (Page 117) (2 cred.; prereq. reg. or cred. in M.E. 180; VII-X Th; Ex.) Ar.
- 190-191-192. Seminar. (Page 113) (1 cred.; prereq. sr.)
 Sec. 1, II Th, 254ME Sec. 4, VI Th, 254ME
 Sec. 2, II T, 254ME Sec. 5, VII M, 251ME
 Sec. 3, VI T, 254ME

SCHOOL OF CHEMISTRY

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. I MTWThF, rec. V T, 225C; lab. VI-VIII TTh, ar. C.) Mr. 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, rec. V M, 100C; lab. V-VII TTh, ar. C.) Mr. Maynard
- 6.‡ General Inorganic Chemistry. Study of the general laws of chemistry and of nonmetals and their compounds. (5 cred.; all; no prereq.; lect. II MTWThF, rec. V Th, 225C; lab. VI-IX MWF, ar. C.) Mr. O'Brien
- 9.‡ General Inorganic Chemistry. Study of general laws of chemistry and of nonmetals and their compounds. More intensive than Course 6. (5 cred.; prereq. high school chemistry; lect. II MTWThF, rec. V Th, 410C.; lab. VI-IX MWF, ar. C.) Mr. Pray

‡ A fee of \$2 is charged for this course against chemistry purchase card.

- 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, rec. V W, 410C; lab. VI-IX TTh, ar. C.) Mr. Nebergall
- 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. II MTWThF, rec. V M 325C; lab. VI-IX MWF, ar. C.) Mr. Johnson
- 13.‡ Semimicro Qualitative Analysis. Laboratory work in systematic qualitative analysis of the anions with lectures on solutions, ionization, chemical and physical equilibria, oxidation, reduction, etc. (5 cred.; prereq. 12; lect. II MTWThF, 215C; rec. V W, 325C; lab. VII-IX MTWF, ar. C.) Mr. Heisig
- 103.* Advanced Inorganic Chemistry. Selected topics in advanced inorganic chemistry. (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1 and 2, Org.Chem. 62; lect. IV MTWThF, rec. VI Th, 111C.) Mr. O'Brien
- 105.* Advanced Inorganic Chemistry. Coordination compounds. (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1 and 2, Org.Chem. 62; lect. III MTWThF, rec. V T, 215C.) Mr. Maynard
- 108.* Nonaqueous Systems. A study of the principal nonaqueous systems—both protonic and aprotic systems. The theories of Bronsted, Lewis, and Usanovich are considered in detail. (3 cred.; prereq. Anal.Chem. 1 and 2, Phys.Chem. 101, 102, and 103; 3 lect. hrs. per week; ar.) Mr. Pray
- 109.*‡ Synthetic Inorganic Chemistry. Methods of preparation and purification of inorganic compounds of special interest. Current literature. (3 to 5 cred.; jr., sr., grad.; prereq. 13 or permission of instructor; lect. and lab. hrs. ar.) Mr. Heisig
- 301.* Research in Inorganic Chemistry. (Cred. and hrs. ar.) Mr. Brasted, Mr. Heisig, Mr. Johnson, Mr. Maynard, Mr. O'Brien, Mr. Pray

SECOND TERM

- 2.‡ General Inorganic Chemistry. (See 1, first term.) (4 cred.; prereq. 1; lect. I MTWThF, rec. V T, 225C; lab. VI-VIII TTh, ar. C.) Mr. Brasted
- 5.‡ General Inorganic Chemistry. (See 4, first term.) (4 cred.; prereq. 4; lect. I MTWThF, rec. V M, 100C; lab. V-VII TTh, ar. C.) Mr. Johnson
- 7.‡ General Inorganic Chemistry. (See 6, first term.) (5 cred.; prereq. 6; lect. II MTWThF, rec. V Th, 225C; lab. VI-IX MWF, ar. C.) Mr. O'Brien
- 10.‡ General Inorganic Chemistry. (See 9, first term.) (5 cred.; prereq. 9; lect. II MTWThF, rec. V Th, 410C; lab. VI-IX MWF, ar. C.) Mr. Nebergall
- 11.‡ Semimicro Qualitative Analysis. (See 11, first term.) (4 cred.; prereq. 2, 5, 7 or 10; lect. III MTWThF, rec. V T, 410C; lab. VI-IX MW, ar. C.) Mr. Barber
- 12.‡ Semimicro Qualitative Analysis. (See 12, first term.) (5 cred.; prereq. 7 or 10; lect. III MTWThF, rec. V T, 410C; lab. VI-IX MWF, ar. C.) Mr. Barber
- 102.*‡ Semimicro Qualitative Analysis. Advanced analysis of the anions and cations. (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1-2; lect. and lab. hrs. ar.) Mr. Barber
- 104.* Advanced Inorganic Chemistry-Atomic Structure and the Chemical Bond. (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1 and 2, Org.Chem. 62; lect. IV MTWThF, rec. V Th, 111C.) Mr. Brasted

‡ A fee of \$2 is charged for this course against chemistry purchase card.

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

- 111.* Elements of Group IVA. Silicon and Related Elements. Review of current studies on boron, silicon, germanium, tin and lead with emphasis on recent silicon chemistry. (3 cred.; prereq. Anal.Chem. 1 and 2, Org.Chem. 62; lect. II MTWThF, rec. V W, 111C.) Mr. Johnson
- 302.* Research in Inorganic Chemistry. (Cred. and hrs. ar.) Mr. Barber, Mr. Johnson, Mr. O'Brien, Mr. Brasted

SUMMER QUARTER

- 1.‡ General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals and their compounds. (4 cred.; all; no prereq.; lect. III MWF, quiz III T, 325C.; lab. VI-VIII F, ar. C.) Mr. 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. II MWF, quiz II T, 100C; lab. VI-VIII W, ar. C.) Mr. Lindeke
- 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 MWF, 100C; lab. VI-IX M, ar. C.) Mr. Lindeke

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. qual. anal.; lect., rec., quiz V-VI TTh, V F, 325C; lab. V-VIII MW, VII-VIII TTh, VI-VIII F, 310C.) Mr. 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. qual. anal.; lect., rec., quiz V MWF, 225C; lab. VI-VIII MWF, V-VIII TTh, 310C.) Mr. Herr
96. Senior Topics. (Cred., hrs., and rooms ar.) Mr. Herr
- 123.‡ Advanced Analytical Chemistry. Problems are assigned that involve special technique on more advanced theory than the basic courses. (3 cred.; prereq. grav. and vol. anal.; hrs. ar.; 310C.) Mr. Herr
- 203.* Selected Topics in Analytical Chemistry. (Cred. and hrs. ar.; 310C.) Mr. Herr
- 301.* Research in Quantitative Analysis. (Cred. and hrs. ar.; 310C.) Mr. 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. qual. anal.; lect., rec., quiz V-VI TTh, V F, 325C; lab. V-VIII MW, VII-VIII TTh, VI-VIII F, 310C.) Mr. Herr
- 7.‡ Quantitative Analysis. (Premed.) (See 7, first term.) (4 cred.; prereq. qual. anal.; lect., rec., quiz V MWF, 225C; lab. VI-VIII MWF, V-VIII TTh, 310C.) Mr. Herr

‡ A fee of \$2 is charged for this course against chemistry purchase card.

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

96. Senior Topics. (Cred., hrs. and rooms ar.) Mr. Herr
 123.‡ Advanced Analytical Chemistry. (See 123, first term.) (3 cred.; prereq. grav. and vol. anal.: hrs. ar.; 310C.) Mr. Herr
 203.* Selected Topics in Analytical Chemistry. (Cred. and hrs. ar.; 310C.) Mr. Herr
 301.* Research in Quantitative Analysis. (Cred. and hrs. ar.; 310C.) Mr. 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. 11 or 12; lect. I MTWThF, 325C; rec. II TTh, 455C; lab. II-IV MWF, 390C; lab. conference III TTh, 225C.) Mr. Dodson and assistants
 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. org. chem.; III MTWThF, 315C.) Mr. Lauer
 102.‡‡ Organic Qualitative Analysis. (Elementary course.) An introduction to the methods of organic qualitative analysis. (3 cred.; prereq. one year of org. chem.; lect. II MW, 315C; 12 hrs. of lab. work ar.) Mr. Lauer and assistants (Limit 20 students.)
 130.‡ Organic Quantitative Analysis. Methods and proximate and ultimate analysis of organic compounds with special attention to semimicro methods. (3 cred.; prereq. 63 and 64, Anal.Chem. 1 and 2 are advisable; hrs. ar.) Mr. Lauer and assistants (Limit 12 students.)
 139.‡ Advanced Organic Chemistry Laboratory Work. Selected laboratory problems of an advanced nature, including some original work. Ability to read German is assumed. (3 cred.; prereq. 63 and 64; hrs. ar.) Mr. Arnold and assistants (Limit 20 students.)
 212.* Physico-Organic Chemistry. Contributions made to organic chemistry by kinetic and equilibrium studies of organic reactions, including mechanisms and catalytic and inotropic reactions, and an introduction to the current electronic formations of organic reactions. (4 cred.; prereq. 107, Phys.Chem. 103 and calculus, or permission of the instructor; I MTWThF, 455C.) Mr. Arnold
 301. Research in Organic Chemistry. (Cred. ar.; prereq. 110; hrs. ar.) Mr. Arnold, Mr. Lauer, Mr. Dodson

SECOND TERM

- 62.‡‡ Elementary Organic Chemistry. (See 61, first term.) (4 cred.; prereq. 61; lect. I MTWThF, rec. II TTh, 325C; lab. II-IV MWF, 390C; lab. conference III TTh, 225C.) Mr. Dodson and assistants
 110.‡‡ Organic Qualitative Analysis. (Advanced course.) Reactions of typical functional groups, identification of pure organic compounds, separation and identification of constituents of mixtures. (3 cred.; prereq. 102 or equiv.; lect. IV MW, 315C; 12 hrs. of lab. work ar.) Mr. Parham and assistants (Limit 20 students.)
 142.* Chemistry of Natural Products. Discussion of the organic chemistry of important classes of natural products. (3 cred.; prereq. 63 and 64; II MTWThF; 315C.) Mr. Parham
 302. Research in Organic Chemistry. (Cred. ar.; prereq. 110; hrs. ar.) Mr. Dodson, Mr. Parham

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

‡ A fee of \$2 is charged for this course against chemistry purchase card.

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

PHYSICAL CHEMISTRY

FIRST TERM

- 104,105,106. Physical Chemistry Laboratory. (1 or 2 cred. per term; VI-VIII MW; 190C.) Mr. Lipscomb
- 107a.† Elementary Physical Chemistry. (Primarily for premed. students.) (6 cred. per qtr.; prereq. two years of college chemistry, one year of college physics; lect. I MTWTh, rec. I F, 410C; lab. VI-VIII MW, 190C.) Mr. Lipscomb
301. Research in Physical Chemistry. (Cred. and hrs. ar.) Mr. Lipscomb

SECOND TERM

- 104,105,106. Physical Chemistry Laboratory. (1 or 2 cred. per term; VI-VIII MW; 190C.) Mr. Livingston
- 107b.† Elementary Physical Chemistry. (Premed.) (See 107a first term.) Mr. Livingston
301. Research in Physical Chemistry. (Cred. and hrs. ar.) Mr. Livingston

CHEMICAL ENGINEERING

SUMMER QUARTER

- 102.‡ Unit Operations. Filtration, heat transfer, evaporation, humidification, air conditioning and drying, with solution of problems. (5 cred.; jr.; prereq. 80, Anal.Chem. 2)
 Sec. 1, lect. I MWF, rec. I TTh, II W, 115C, Mr. Madden
 Sec. 2, lect. I MWF, rec. I TTh, 215C, II W, 455C, Mr. Jackson
111. Unit Operations Laboratory. Must accompany ChE. 102. (1 cred.; jr.; prereq. ChE. 101)
 Sec. 1, lab. VI-IX T, 90C, Mr. Madden
 Sec. 2, lab. VI-IX Th, 90C, Mr. Jackson
131. Inorganic Technology. Application of unit operations, physical chemistry and chemical engineering economics to industrial inorganic processes. (4 cred.; jr. in Ch.E. or Chem.; prereq. Ch.E. 102 or by permission; lect., rec. IV MTWThF, 115C.) Mr. Stephenson
132. Organic Technology. Similar to Ch.E. 131 except applied to the organic industrial processes. (4 cred.; sr. in Ch.E.; prereq. Ch.E. 103 and Org.Chem. or by permission; lect., rec. III MTWThF, 111C.) Mr. Mann.

FIRST, SECOND, OR THIRD TERM

- 151-152.§§ Chemical Manufacture. Semi-works manufacture of inorganic and organic chemical products. (3 cred. each; prereq. Ch.E. 103, 131; lab. daily 9 a.m. to 6 p.m.; lect., conferences, I—151, 111C, I—152, 315C.) Mr. Mann, Mr. Ceaglske, Mr. Amundson, Mr. Stoppel, Mr. Stephenson, Mr. Bond, Mr. Comley, Mr. Jackson, Mr. Madden

SCHOOL OF MINES AND METALLURGY

MINING

FIRST TERM

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

† To receive credit for this course a student must complete both 107a and 107b. No grades will be submitted until completion of both.

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

§ Each laboratory section is limited to 16 students.

THIRD TERM

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

METALLURGY

SUMMER QUARTER

1. Assaying. Lectures on the fire assaying of ores and metallurgical products. Theory of sampling, balance manipulation, furnaces, slag calculations, oxidation, reduction, special methods, etc. (3 cred.; prereq. Chem. 5 or equiv.; lect. I MWF, lab. VI-IX M; 108AH.) Mr. Bitsianes
106. Nonferrous Metallurgy. Metallurgical principles involved in nonferrous metallurgy including leaching, roasting, smelting, and refining. Metallurgy of copper. (3 cred.; prereq. General Inorg.Chem.; lect. III MWF; 108AH.) Mr. Bitsianes

FIRST TERM

11. Metallurgy of Pig Iron. Raw materials, construction, and basic principles of the blast furnace process. Chemistry of the process. Fluxes and slags. Principles for controlling operation and products. (3 cred.; prereq. Chem. 5 or equiv.; II MTWThF; 108AH.) Mr. Joseph
12. Metallurgy of Steel. Steel producing process and various types of steel. Modern furnace construction. Chemistry of refining processes. The application of protective coatings to steel products. (3 cred.; prereq. Chem. 5 or equiv.; IV MTWThF; 108AH.) Mr. Martin
110. Mineral Dressing. Study of jaw and gyratory crushers, ball mills, tube mills, volumetric sizing, gravimetric sizing. Concentration by tables, jigs, bowl classifiers, log washers, and miscellaneous devices used in mineral dressing. (3 cred.; prereq. Geol. 24; lect. IV MW; lab. VI-VIII W; 202AH.) Mr. Cooke
133. Electrometallurgy. Application of electricity to thermometallurgy. Design and operation of electric furnaces and their use in smelting of metals and in the production of ferro alloys. (3 cred.; prereq. Met. 12; II MTWThF; 111AH.) Mr. Martin

METALLOGRAPHY

SUMMER QUARTER

152. Metallography for Aeronautical Engineers. Principles; metallography of iron and steel with special reference to alloy steels, and light alloys used in airplane construction. Laboratory work and demonstrations. (3 cred.; prereq. sr. Aero.E.; I TTh; lab. VI-VIII M; 315AH.) Mr. Mackay
153. Metallography. (Long course for metallurgical engineers.) Theory of metallic alloys. Metallographic technique. Properties of metals and alloys; metallography of iron and steel and commercial alloys. Technical metallography. (4 cred.; prereq. Met. 12 or equiv.; lect. I MWF; lab. VI-IX T; 315AH.) Mr. Jerabek
156. Metallography for Mechanical, Mining, and Petroleum Engineers. Principles of metallography, including pyrometry, thermal analysis, constitution diagrams, microscopic and photomicrographic technique; metallography and heat treatment of iron and steel. (3 cred.; prereq. jr., sr.; lect. III TTh, lab. Sec. 1, VI-VIII W, lab. Sec. 2, VI-VIII Th; 315AH.) Mr. Jerabek
160. Metallography (Chem.). Principles of metallography, including constitution diagrams, preparation, and standardization of thermocouples, preparation and thermal analysis of alloys, their microscopic examination and photomicrographs; typical alloy systems such as iron carbon (steel, cast iron), and some nonferrous alloys. (3 cred.; prereq. jr.; lect. III MF; lab. VI-VIII F; 315AH.) Mr. Mackay

COLLEGE OF AGRICULTURE, FORESTRY AND HOME ECONOMICS

GENERAL INFORMATION

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

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

GRADUATE STUDY

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

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

Students intending to register for any phase of graduate work and who expect to obtain credit in the Graduate School should make arrangements through the proper committees and with the dean of the Graduate School and should register in that school. See page 17.

ADMISSION

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

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

An *asterisk* (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 18.)

AGRICULTURAL BIOCHEMISTRY

FIRST TERM

1. Elementary Organic Chemistry. (Page 72§) (5 cred.; soph., jr., sr.; prereq. Inorg. Chem. 1 and 2, or 4 and 5; I-II MTWThF; 113SnH.) Ar.
- 2.‡ Quantitative Methods. (Page 72§) (5 cred.; soph., jr., sr.; prereq. Inorg. Chem. 1 and 2, or 4 and 5; limited to 32; I-IV, VI-IX MWF; 116SnH.) Mr. Bleidner
118. Laboratory Problems in Biochemistry. (Page 73§) (3 to 5 cred.; jr., sr., grad.; permission of instructor; ar.; ar.) Ar.

‡ A laboratory fee of \$2 is required for this course. Two \$5 cards (from which the \$2 fee will be deducted) are to be purchased from cashier's office, St. Paul Campus, before a laboratory desk will be assigned. Veterans will obtain authorizations for cards from Veterans' Bureau and obtain cards directly from the secretary of the Division of Agricultural Biochemistry.

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SECOND TERM

118. Laboratory Problems in Biochemistry. (Page 73§) (3 to 5 cred.; jr., sr., grad.; permission of instructor; ar.; ar.) Ar.

AGRICULTURAL ECONOMICS

FIRST TERM

1. Principles of Economics I. (Page 74§) (3 cred.; soph., jr., sr.; no prereq.) Mr. Lowe
 Sec. 1, I MTWThF, 109HH Sec. 2, II MTWThF, 109HH
107. Farm Work Simplification. A study of principles and methods of accomplishing farm work in less time and with less effort. Methods of analyzing jobs, principles of motion economy, efficient working methods for different farm enterprises. Practice in planning improved working methods. (3 cred.; jr., sr., grad.; prereq. Agr.Econ. 2; II MTWThF; 312HH.) Mr. Engene
140. Marketing Organization Staples. (Page 75§) (3 cred.; jr., sr., grad.; prereq. Agr. Econ. 40; III MTWThF; 312HH.) Mr. Cox

SECOND TERM

2. Principles of Economics II. (Page 74§) (5 cred.; soph., jr., sr.; prereq. Agr.Econ. I; I-II MTWThF; 109HH.) Mr. Lowe
- 200.* General Seminar in Agricultural Economics. (3 cred.; grad.; ar.; 312HH.) Staff

AGRICULTURAL EDUCATION

For list of courses in Agricultural Education see courses listed under the College of Education, page 109.

AGRICULTURAL ENGINEERING

FIRST TERM

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

SECOND TERM

- 40.‡ Mechanical Training. (See 40, first term.) (2 to 4 cred.; no prereq.; Lect. VI TWThF; lab. ar.; 106, 20En.) (Limited to 40.) Mr. Dent
- 42.‡‡‡ Art Metal Work. A course designed for persons interested in creating articles of permanent beauty and value from metals including copper, gar-alloy, brass, steel, aluminum, and silver. Forming of plates, bowls and trays, use of jeweler's saw in

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

‡‡ A fee of \$6 is charged for this course.

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

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pierced work; etching; soldering; making candle sticks, book ends, desk sets, lamps, and bracelets. Students may choose any projects and metals. (2 to 4 cred.; no prereq.; lect. VII TWThF; lab. ar.; 106, 20En.) (Limited to 20.) Mr. Dent

AGRONOMY AND PLANT GENETICS

FIRST AND SECOND TERMS

AGRONOMY

- 201.* Research in Farm Crops. (Page 37†) (3 to 9 cred.; grad.; prereq. 121, 123; ar.) Mr. Dunham, Mr. Schmid

PLANT GENETICS

- 241.* Research in Plant Genetics. (Page 37†) (Cred. ar.; grad.; ar.) Mr. Hayes, Mr. Rinke, Mr. Thomas, Mr. Lambert
244. Laboratory Methods in Plant Breeding. (Page 37†) (3 cred.; grad.; ar.) Staff

ANIMAL AND POULTRY HUSBANDRY

FIRST TERM

ANIMAL HUSBANDRY

8. Breeds of Livestock. The origin, history, characteristics, and economic importance of the breeds of livestock. Factors for consideration in the selecting of breeding animals. (3 cred.; soph., jr., sr.; prereq. 1; I-II MTWThF; CSt.) Mr. Anderson
56. Livestock Feeding. A study of the nutritional requirements of farm animals and the composition and characteristics of livestock feeds. The value of individual feeds and of combinations of feeds for beef cattle, sheep, swine and horses. (3 cred.; jr., sr.; prereq. An.Husb. 1; III-IV MWF; 3St.) Mr. Anderson
213.* Research in Animal Husbandry. Special problems assigned to students to be worked out under the supervision of a faculty member. (3 cred.; grad.; ar.) Mr. Peters, Mr. Ferrin, Mr. Winters

POULTRY HUSBANDRY

- 214.* Research in Poultry Husbandry. Special problems assigned to students to be worked out under the supervision of a faculty member. (3 cred.; grad.; ar.) Mr. Sloan

SECOND TERM

ANIMAL HUSBANDRY

57. Livestock Feeding. Continuation of An.Husb. 56. (3 cred.; jr., sr.; prereq. 1; III-IV MWF; 3St.) Mr. Anderson
213.* Research in Animal Husbandry. (Same as first term.)

POULTRY HUSBANDRY

- 214.* Research in Poultry Husbandry. (Same as first term.)

DAIRY HUSBANDRY

FIRST AND SECOND TERMS

- 208.* Research in Dairy Production. (Page 65†) (Prereq. preliminary grad. work.) Mr. Fitch, Mr. Petersen, Mr. Gullickson, Mr. Gilmore

† For description see *Graduate School Bulletin*.

- 209.* Research in Dairy Manufacturing. (Page 65†) (Prereq. preliminary grad. work.) Mr. Combs, Mr. Coulter
 215.* Research in Dairy Bacteriology. (Page 65†) (Prereq. preliminary grad. work.) Mr. Macy, Mr. Olson

ENTOMOLOGY AND ECONOMIC ZOOLOGY¶

FIRST TERM

5. Economic Entomology. The life histories, habits, and methods of control of the insect pests of orchard, field, and garden. Laboratory work in the determination of the more important forms. (5 cred.; soph., jr., sr.; prereq. Zool. 14-15 or equiv.; lect. VI MTWTh, VI-VII F; lab. VII-VIII-IX MTWTh; 301Ad.) Mr. Hayes
 13. Field Zoology. Offered at Itasca Park. (1½ cred.; fr.; no prereq.) Mr. Dawson, Mr. Harden
 55. Entomological Techniques. Practical laboratory instruction in mounting, preservation of insect larvae; preparation of microscopic mounts of minute insects; labeling, classifying, and cataloging specimens of insects for scientific study. (3 cred.; jr., sr.; 9 hrs. lab.; ar.) Mr. Milliron

FIRST AND SECOND TERMS

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. (2½ or more cred.; jr., sr., grad.; prereq. 9 hrs. ent., and other prescribed work; ar.; Ad.) Mr. Mickel, Mr. Granovsky, Mr. Hodson, Mr. Haydak, Mr. Marshall, Mr. Richards, Mr. Smith, Mr. Burroughs, Mr. Cutkomp
 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 division relative to methods of collection and preparation of material. (3 or more cred.; grad.; ar.) Mr. Mickel, Mr. Granovsky, Mr. Hodson, Mr. Haydak, Mr. Marshall, Mr. Richards, Mr. Smith, Mr. Burroughs, Mr. Cutkomp

FORESTRY¶

FIRST TERM

(Offered at Itasca Park. Open only to students who have completed at least two quarters of forestry, or one year in a junior college, or other college. Preparatory courses in botany, dendrology, and zoology are desirable. The schedule is arranged to occupy the student's full time for 5½ days per week. Largely field or laboratory work.)

- For.5. Field Silviculture. (Pages 93-95§) (1½ cred.; no prereq.) Mr. Hansen and teaching assistant.
 For.6. Field Mensuration. (Pages 93-95§) (1½ cred.; no prereq.) Mr. Brown and teaching assistant
 For.11. Camp Management. (Pages 93-95§) (1 cred.; no prereq.) Mr. Brown and teaching assistant
 Ent.13. Field Zoology. (See also under Entomology and Economic Zoology.) (1½ cred.; no prereq.) Mr. Dawson, Mr. Harden
 Bot.6. Field Botany. (See under Botany.) (1½ cred.; no prereq.) Ar.

† For description see *Graduate School Bulletin*.

¶ For additional courses see Itasca Park Biological Station, page 83.

§ See *College of Agriculture, Forestry, and Home Economics Bulletin*, 1947-49.

HOME ECONOMICS

FIRST TERM

25. Design Applied to Crafts. Principles of design and color harmony applied in various crafts. Articles are planned to relate to definite dress and home furnishing problems. (3 cred.; prereq. 21 or 22; VI-VII MTWThF and 2 hrs. ar.; 110HE.) (Limited to 24.) Miss Myren
34. Nutrition Problems. A consideration of the nutrition problems most commonly met by adults and children in typical families. (4 cred.; 3rd qtr. soph., jr., sr.; prereq. 31, 40, *physiol.*, or *human biol.*; I MTWThF and II MWF; 213HE.) Mrs. Gibler
40. Food Preparation. The development of technique and the application of fundamental science principles to cookery processes and preservation. The establishment of good standards for food products. (5 cred.; fr. with honor point ratio of 1 or above; prereq. 2 qtrs. chem.; lect. IV-V TTh; lab. IV-V-VI-VII MWF; 103, 203HE.) Mrs. Trammell
50. Textiles. A study of textile materials from the standpoint of the consumer; the characteristics of commonly-used fibers and fabrics; textile information as a tool in the selection and maintenance of textile products used for clothing and home furnishing. Laboratory study of selected fabrics. (3 cred.; jr., sr.; prereq. 1; IV-V MTWThF and 2 hrs. ar.; 307HE.) Miss Bayor
86. Home Management: Operation and Maintenance: Laboratory. Residence in one of the home management houses involving experience in sharing and managing the home-making activities and responsibilities for the group. (4 cred.; jr., sr.; prereq. H.E. 85 or parallel, H.E. 40, H.E. 41 advised, P.H. 52a, b; Home Mgt. House.) Miss Studley, Miss Jacobson
116. Family Clothing Problems. The buying of clothing, the simplification of clothing, the labeling and standardization of clothing, the sizing of garments and patterns, recent developments in the choice of clothing for specific uses. (3 cred.; jr., sr.; prereq. H.E. 3, H.E. 50; IV MTWThF and 1 hr. ar.; 305HE.) Miss Didier
142. Experimental Cookery. An intensive study of problems in foods and food preparation. Individual laboratory problems, adapted to student's specific food interests. (3 cred.; jr., sr., grad.; prereq. H.E. 40 or equiv., *Agr. Biochem.* 1 or equiv.; lect. I-II M; lab. I-II TWThF; 107, 203HE.) Miss Turnbull
146. Special Food Problems. Class problems in foods and food preparation. (3 cred.; sr.; prereq. H.E. 142; lect. VI-VII F, lab. VI-VII MTWTh; 107HE.) Miss Turnbull
150. Textile Problems. The chief objective of this course is to provide an 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 will be adapted to the needs of the students who elect the course. Readings in current textiles literature will permit individual study of selected topics with oral and written reports. (3 cred.; prereq. preliminary credits in textiles; I MTWThF and 2 hrs. ar.; 305HE.) Miss Didier
178. Clinical Problems in Nutrition. The application of nutrition information to problems in health and disease involving assigned readings, discussions, and experience in a clinic. (2 cred.; jr., sr.; prereq. 170, 35 or parallel; lab. VI-VII-VIII TTh; lect. VIII MW; 213HE.) Mrs. Gibler
180. Home Planning and Furnishing. Problems in selecting a home and prolonging the life of the house and its furnishings. Stresses intelligent planning and furnishing of the home on the basis of family living. (5 cred.; jr., sr.; prereq. H.E. 27, 120 recommended; VI-VII-VIII MTWThF and 1 hr. ar.; 303, 304HE.) Miss Paulsen

185. Family Relationships. A study of the factors that promote satisfaction within the immediate family and for the family in relation to the community. (3 cred.; jr., sr., grad.; prereq. H.E. 86 or parallel, H.E.Ed. 90; III MTWThF and 1 hr. ar.; 114HE.) Mrs. Wood
186. Problems in Income Management. An intensive study of problems relating to individual and family budgets. Readings, discussions, and field work. (3 cred.; prereq. 85 or parallel, 86 or parallel, 34 or equiv.; V MTWThF and 1 hr. ar.; 213HE.) Miss Studley
295. Home Economics Problems. Investigation of selected problems in the field of related art. (1 cred.; grad. only; prereq. permission of instructor; ar.; ar.) Miss Paulsen

SECOND TERM

85. Home Management: Operation and Maintenance (Lectures). Discussion of the management aspects of homemaking with emphasis on the problems involved in the use of time, energy and money. 4 cred.; jr., sr.; prereq. H.E. 40, 41 advised; IV MTWThF and 3 hrs. ar.; 213HE.) Miss Thomson
86. Home Management: Operation and Maintenance (Laboratory). (See 86, first term.) (4 cred.; jr., sr.; prereq. H.E. 40, 41 advised; H.E. 85 or parallel; P.H. 52a, b; ar.; Home Mgt. House.) Miss Thomson, Miss Jacobson

HOME ECONOMICS EDUCATION

See Home Economics Education, College of Education, page 118.

HORTICULTURE

FIRST AND SECOND TERMS

- 190-191-192. Special Problems. (2 to 4 cred.; jr., sr., grad.; ar.) Mr. Alderman, Mr. Brierley, Mr. Currence, Mr. Krantz, Mr. Hutchins, Mr. Wilcox, Mr. Winter, Mr. Nylund
- 247.* Reports on Special Horticultural Topics. (9 cred. or less.) Mr. Alderman, Mr. Brierley, Mr. Currence, Mr. Krantz, Mr. Hutchins, Mr. Wilcox, Mr. Winter, Mr. Nylund
- 249.* Research in Horticultural Crop Breeding. (9 cred. or less.) Mr. Currence, Mr. Krantz, Mr. Hutchins, Mr. Wilcox

PLANT PATHOLOGY AND BOTANY¶

FIRST AND SECOND TERMS

- 206.* Research in Plant Pathology. (Page 147† description for Course 203-204-205.) Cred. ar.; grad.; PP.) Mr. Stakman, Mr. J. J. Christensen, Mr. Eide, Miss Hart, Mr. C. M. Christensen, Miss Dossdall, Mr. Kernkamp
- 210.* Research in Mycology. (Page 147†) (Cred. ar.; grad.; prereq. 105-106-107; PP.) Mr. Stakman, Mr. C. M. Christensen, Miss Dossdall
- 257.* Research Problems in Applied Plant Physiology. (Page 148†) (Cred. ar.; grad.; Agr.Bot.) Mr. Landon
- 263.* Research Problems in Agricultural Botany. (Page 148†) (3 to 5 cred.; grad.; Agr.Bot.) Mr. Larson, Mr. Stakman

† See *Graduate School Bulletin*.

¶ For additional courses see Itasca Park Biological Station, page 83.

RHETORIC

FIRST TERM

- 1.‡ Communication I. Specialized training in listening, reading, speaking, and writing, according to individual needs. Core assignments integrating the use of all four skills. Progress tests. Re-examination to determine what further training in communication is needed for attainment of the level of proficiency required of our college freshmen. (3 cred.; all; no prereq.; I MTWThF; 307En.) Mr. Humphrey
- 22.‡ Public Speaking. A practical course in the fundamentals of speech making. Particular emphasis upon organizing the speech and projecting it to the audience. (3 cred.; soph., jr., sr.; prereq. satisfaction of the freshman communication requirement.) Mr. Woods
 Sec. 1, III MTWThF, 120TSA Sec. 2, V MTWThF, 120TSA
32. Survey of English Literature II. Survey of English literature of the nineteenth century, beginning with Wordsworth and touching on the major Romantic writers. (3 cred.; soph., jr., sr.; prereq. satisfaction of the freshman communication requirement; II MTWThF; 307En.) Mr. Humphrey
51. Exposition. Essays and articles; technical writing; application letters; review of English usage. (3 cred.; jr., sr.; prereq. satisfaction of freshman communication requirement.) Miss Thurston
 Sec. 1, IV MTWThF, 312En Sec. 2, V MTWThF, 312En

SECOND TERM

2. Communication II. Expository communication. Balanced training in adapting the four communication skills to the presentation and assimilation of oral and written materials of expository nature. Note taking, outlining, written papers, oral reports. (3 cred.; all; prereq. placement test; I MTWThF; 307En.) Mr. Wright
3. Communication III. Persuasive communication. Balanced training in adapting the four communication skills to the presentation and critical analysis of oral and written materials of a persuasive nature. Argument, evidence, and the techniques of documentation. Brief writing and persuasive speaking. (3 cred.; all; prereq. placement tests; II MTWThF; 307En.) Mr. Wright
- 22.‡ Public Speaking. (See 22, first term.) (3 cred.; soph., jr., sr.; prereq. satisfaction of freshman communication requirement.) Mr. Sandquist
 Sec. 1, III MTWThF, 120TSA Sec. 2, V MTWThF, 120TSA
51. Exposition. (See 51, first term.) (3 cred.; jr., sr.; prereq. satisfaction of freshman communication requirement.) Mr. Seidenkranz
 Sec. 1, III MTWThF, 312En Sec. 2, IV MTWThF, 312En

SOILS

FIRST AND SECOND TERMS

- 202.* Research Problems in Soils. (Page 171.†) (2-5 cred.; grad.; prereq. 107; must obtain permission of instructor in advance of registration; ar.) Mr. Rost, Mr. McMiller, Mr. Caldwell, Mr. MacGregor

VETERINARY MEDICINE‡

FIRST AND SECOND TERMS

104. Special Animal Anatomy. Individual problems for further study in Animal Anatomy. (1-3 cred. per quarter, registration for more than one quarter permitted; prereq. 101; ar.; ar.) Dr. Kernkamp, Dr. Kitchell

† See *Graduate School Bulletin*.

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

§ Tuition fees in Veterinary Medicine are \$65 for resident and \$130 for nonresident students, incidental fee \$10.65, and deposit \$5.

114. Special Animal Histology and Embryology. Individual problems for further study in animal histology and embryology and histological techniques. (1-3 cred. per quarter, registration for more than one quarter permitted; prereq. 111 or equiv.; ar.; ar.) Dr. Kernkamp, Dr. Kitchell
201. Advanced Animal and Poultry Pathology. Studies of clinical material, collateral reading, and conferences. (Cred. ar.; prereq. permission of instructor.) Dr. Kernkamp, Dr. Fenstermacher, Dr. Sautter
205. Advanced Animal Bacteriology. Studies on clinical material, collateral reading, and conferences. (Cred. ar.; prereq. permission of instructor.) Dr. Pomeroy, Dr. Fenstermacher
209. Advanced Clinical Technology. A more detailed application of clinical techniques in the diagnosis and therapy of animal diseases. (Cred. ar.; prereq. permission of instructor.) Dr. Boyd
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. permission of instructor.) Dr. Boyd
230. Research in Veterinary Medicine. (Cred. ar.) Staff

BIOLOGICAL STATION SUMMER SESSION

During the second term of the Summer Session an excellent opportunity for the study of terrestrial and fresh-water biology in its most fundamental aspects is presented by the Biological Station of the University of Minnesota, located at Itasca State Park.

These classes will be conducted co-operatively by various departments in the College of Agriculture, Forestry, and Home Economics and the College of Science, Literature, and the Arts. Classes will be held at the station beginning July 26, ending August 28.

GENERAL INFORMATION

Courses are designed to provide opportunity for instruction and research and to train scientific investigators in the fields of terrestrial and fresh-water biology. The station affords an excellent opportunity for study of the flora and fauna found in the midwestern and lake states region.

Elementary courses are available in field botany, field entomology, wild-life conservation, plant pathology, etc., of special interest to high school teachers and others interested in conservation and the teaching of conservation.

Field trips and indoor laboratory work are given on designated days. In the field the student visits typical habitats and gathers specimens for laboratory study, supplemented by informal lectures by instructors in charge of each tour. The same scholastic standards are maintained at the station as on the campus of the University of Minnesota and college credit is given for work satisfactorily completed.

The interested students may find the following opportunities offered by the Biological Station at Itasca State Park:

1. Elementary and advanced instruction during the five weeks of the second term of the University Summer Session (July 26 to August 28) for college undergraduates, graduate students, high school and nature study teachers, and others interested.
2. Opportunities for graduate students who may wish to pursue biological investigation in the lakes, fields, or forests close to the station.
3. Opportunities for teachers of botany, zoology, and biology, as well as for guest investigators for independent research in terrestrial and fresh-water biology.

FEES AND EXPENSES

Registrations will be accepted during June and July but not later than July 26. The following fees are payable by each registrant on or before July 26 and must be paid before registration is completed:

Tuition fee	\$30.00
Incidental fee	6.00
General deposit fee	2.00
Equipment fee	5.00
Dormitory and dining hall fee	5.00
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Total fees for the term	\$48.00

In addition it is estimated on the basis of the experience of other groups of students that the cost of board will not exceed a total of \$50 for the five weeks. No additional charge is made for room in the dormitories and cabins of the Biological Station.

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

Equipment fees include the use of microscopes, nets, boats, various class supplies, and accessories.

The estimated cost of \$98.00 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 26. After July 26 the late registration fee will be charged according to the following schedule:

Tuesday, July 27	\$2.00
Wednesday, July 28	3.00
Thursday, July 29	4.00
Friday, July 30	5.00

No registration will be accepted after July 30 without the approval of the professor in charge and payment of a \$5 fee.

ADMISSION

The courses in the Biological Station are open to all qualified graduate and undergraduate students who have had usual preliminary courses in biological subjects, as well as to qualified high school graduates. Certain courses are especially designed for the teacher of biological subjects in colleges, high schools, and public schools, and for others interested in plant and animal life.

Inquiries concerning the Biological Station should be directed to the College Office, University Farm, St. Paul 1, Minnesota.

Applications for registration for graduate students will be handled through the college office who will forward them to the dean of the Graduate School for approval. The applicant will then be informed of the status of his eligibility for admission to both the Graduate School and the Biological Station.

For the 1948 session, not more than 100 (60 men and 40 women) applicants can be admitted, and the priority of registration will govern admission.

An *asterisk* (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 18.)

SECOND TERM OF SUMMER SESSION

The courses to be given at the Biological Station will begin July 26 and close August 28. Special arrangements will be made for those whose school or other duties make it impossible to remain through the final week of the session.

The following courses are offered in the Biological Station for the year 1948 at Itasca Park during the second term of the Summer Session.

BOTANY

8. Elements of Field Taxonomy. The identification of common wild flowers, and a general study of the classification and relationship of flowering plants. Field work in forest, swamp, bog, lake, and prairie. Texts: Moyle, *Field Key to the Common Non-Woody Flowering Plants and Ferns of Minnesota*; *Gray's New Manual of Botany*. (4 cred.; prereq. Bot. 1, or consent of instructor; WS.) Mr. Buell
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 bot. or instructor's permission; MTh.) Mr. Christensen
- 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. bot. or zool. 10 cred., or consent of instructor; WS.) Mr. Tryon
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. Bot. 8, or consent of instructor; TF.) Mr. Tryon
131. Field Ecology. The study of the plant communities represented in Itasca Park and vicinity and their dynamic relationships. Also the relationships of the local communities to the vegetation of Minnesota as a whole. Use of modern methods of vegetational analysis and measurement of environmental factors. (4 cred.; prereq. Bot. 50 or 130 or For. 2-3-4; TF.) Mr. Buell
170. Bryophytes and Pteridophytes. Field and laboratory study of the mosses, liverworts, ferns and fern allies of Minnesota. Texts: Conard, *How To Know the Mosses*; *The Ferns and Fern Allies of Wisconsin* (obtainable from the Department of Botany, University of Wisconsin). (4 cred.; prereq. 10 cred. of biology, or consent of instructor; MTh.) Mr. Evans
176. Freshwater Algae. The taxonomy and limnological relations of the fresh-water algae of Minnesota. Text: Smith, *Fresh-water Algae of the U. S.* (4 cred.; prereq. 10 cred. of biology, or consent of instructor; TF.) Mr. Evans
196. Problems in Ecology, Taxonomy, Bryology, or Algology. Advanced studies based on individual field work and research. (Cred. ar.; adv. students with proper qualifications.) Mr. Tryon, Mr. Buell, Mr. Evans

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.) Mr. Peters
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.) Mr. Marshall

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

76. Techniques of Field Biology. A study of available flora and fauna including the methods of collection, preservation, arrangement, and demonstration of illustrative material and effective presentation to classes. Lectures, laboratory, and field work. This course is primarily designed to meet the needs of teachers of biological subjects. Text: Miller and Blydes, *Methods and Materials for Teaching Biological Sciences*. (4 cred.; prereq. bot. or zool. 10 credits or consent of instructor; WS.) Mr. Peters
162. Ecology of Terrestrial Vertebrates. Detailed studies of the ecological relationships of northern Minnesota terrestrial vertebrates. Texts: same as Course 68 and Elton, *Animal Ecology* or Hesse, Allee, and Schmidt, *Ecological Animal Geography*. Field projects, laboratory 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.) Mr. Marshall
196. Special Problems in Entomology and Economic Zoology. Advanced work in entomology and economic zoology with ample opportunity for individual research, especially in various phases of faunistic studies in terrestrial, aquatic, and forest entomology and economic zoology. (Cred. ar.; adv. students with proper qualifications.) Mr. Peters, Mr. Marshall

FORESTRY

12. Field Dendrology. Trees and shrubs found in the Itasca Park region, with special reference to identification by means of constant characters. (Not open for credit to students in forestry.) Text required: Rosendahl and Butters, *Trees and Shrubs of Minnesota*. (4 cred.; prereq. 10 cred. in bot., or consent of instructor; WS.) Mr. Buell

PLANT PATHOLOGY AND BOTANY

56. Introduction to the Study of Fungi. The structure, development and identification of fungi, especially those of economic importance. (4 cred.; jr., sr.; prereq. bot. 9 cred. or instructor's permission; MTh.) Mr. 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. 105-106-107.) Mr. 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.) Mr. Eddy
- 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 zool.; WS.) Mr. Eddy
- 116.‡ Limnology. A study of the conditions of life and the distribution of organisms in lakes of the Itasca region. Text: Welch, *Limnology*. (4 cred.; prereq. 15 cred. in zool.; MTh.) Mr. Eddy
- 143.‡ Animal Parasites. Parasites of local fauna with special reference to helminths. (4 cred.; prereq. 15 cred. in zool. or consent of instructor; TF.) Mr. Chandler
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; adv. students.) Mr. Eddy, Mr. Chandler

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

LAW SCHOOL

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

The Law School will offer a complete quarter (June 14 to August 28) of law work with courses for both beginning and advanced students. Registration will be for the quarter, not for the single term. Courses offered are:

FIRST YEAR COURSES

First and Second Terms

Contracts. (9 cred.) Mr. Read
Actions and Equity I. (6 cred.) Mr. Pirsig

ADVANCED COURSES

First and Second Terms

Property II. (6 cred.) Mr. Bade, Mr. Swenson
Briefmaking. (3 cred.) Mr. McClure
Banking and Negotiable Paper. (6 cred.) Mr. Kinyon
Taxation. (6 cred.) Mr. Rottschaefer
International Law. (6 cred.) Mr. Riesenfeld
Trusts. (6 cred.) Mr. Mussman
Trade Regulation. (3 cred.) Mr. Lockhart
Labor Law. (3 cred.) Mr. McClintock
Wills. (3 cred.) Mr. Blackmun
Patent Law. (3 cred.) Mr. Kegan

Tuition fees for the quarter are: resident, \$42; nonresident, \$90. Credit hour fee: resident, \$3.50; nonresident, \$7.50. There will be the usual incidental fee of \$10.65 for the Coffman Memorial Union, the Health Service, the *Minnesota Daily*, etc. Deposit fee for the quarter, \$2.

MEDICAL SCHOOL

GENERAL INFORMATION

GENERAL

The Summer Session of 1948 will not represent a required quarter of attendance by medical students at the University of Minnesota Medical School. As a result of this deceleration of the curriculum, the preclinical and clinical departments will, in large measure, devote themselves to course offerings which will have an unusual breadth of appeal. Altho the medical students at this institution will be given preference in registration in certain of the courses, the latter will be open to students from other institutions and to practicing physicians. The courses listed are available also to professional and nonprofessional students in other areas of education.

In the following departments, courses comprising required work of the regular medical curriculum are offered: Anatomy, Bacteriology, Pharmacology, Physiological Chemistry, and the School of Public Health. 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 makeup 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.)

During the Summer Session *clinical* training will be offered to medical students and to practicing physicians on a somewhat different basis than previously. Externships have been established in the following departments: Medicine, Neurology, Obstetrics and Gynecology, Pediatrics, and Surgery. These departments 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 junior and senior students in the Medical School, 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 summer 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 his time may, if he chooses, be devoted to electives in basic sciences or in another clinical department. (See departmental listings.) Medical classes of the Summer Session, 1948 will begin on June 16.

FEES

Medical students desiring time credit—The Medical School tuition fee for a full Summer Session is \$77 for residents of Minnesota, and \$150 for nonresidents. Less than a full program may be paid for on a credit hour basis, namely \$6.50 per credit hour (nonresidents \$12.50). In addition each student will pay the incidental fee of \$10.65 and a deposit of \$5. Students in certain courses are required to furnish microscopes.

Term fees are one-half the quarter fees. Laboratory fees are not required under this plan. The schedule of total fees will be therefore:

	Per Quarter	Per Term
Tuition fee	\$77.00 (\$150.00)	\$38.50 (\$75.00)
Incidental fee	10.65	5.33
Deposit	5.00	5.00

Medical students or physicians registering for externships—A tuition fee of \$35 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 in 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 \$6 per term. In elective courses where a microscope is required this may be rented from the University at a charge of \$3.50 per term.

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 fee of \$36 per term plus special course fees as indicated in course descriptions, and a \$2 deposit. At their option, they are also permitted to register for less than a full program and pay on a credit hour basis of \$6.50 per credit hour (nonresidents \$12.50). In such a case the incidental fee of \$10.65 and a deposit of \$5 are required.

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 exclusively 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 Aucker 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 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 in this bulletin or the special bulletin on graduate work in medicine.

A special program of courses has been arranged through the Center for Continuation Study for medical officers returning to civilian life from military service and a restricted number of others. A limited number of such physicians may live at the Center for Continuation Study. Address Director, Postgraduate Medical Education, University of Minnesota, for details.

ANATOMY

FIRST TERM

- 103.‡ Human Histology. A study of tissues and organs. (6 cred.; prereq. Zool. 1-2-3; lect. and lab. I-IV MTWThF; 214 IA.) Dr. Kirschbaum
- 111. Neuroanatomy. Morphology of central nervous system. (6 cred.; prereq. Anat. 103 or equiv.; lect. and lab. I-IV MTWThF; 215 IA.) Dr. Rasmussen

‡ A fee of \$7.50 is charged for this course. Microscope required. Students may obtain use of microscope by purchasing two \$3 microscope cards from the bursar.

150. Special Topics in Neurology. Study of literature on selected phases of human neurology. (Cred. ar.; prereq. Anat. 111; hrs. ar.; 217 IA.) Dr. Rasmussen
159. Experimental Methods for the Study of Neoplastic Growths. (2 cred.; prereq. Anat. 103 or equiv.; lect. and demonstration VII-IX TTh; 226 IA.) Dr. Kirschbaum
165. Hematology. For medical technologists and others. Enrolment limited. Microscope fee, \$6. (4 cred.; prereq. Anat. 103 or equiv.; lect. II MTWTh, lab. III-IV MTWTh; 213IA.) Dr. Sundberg and assistant

FIRST AND SECOND TERMS

- 100†-101‡ Gross Human Anatomy. Dissection of lower and upper halves of body, respectively. Enrolment limited. (9 cred. each; prereq. Zool. 1-2-3 and preferably 22; lect. I MTWThF, 304 IA; lab. II-IV, VI-VII MTWThF, 306 IA.) Dr. Williams (Anat. 100 or 101); Dr. Hartmann (Anat. 101 or 100) and assistants. (These two courses may be run consecutively or concurrently, depending upon number of students and their needs. Permission of chairman, Department of Anatomy required before June 1.)
- 156.‡‡ Advanced Anatomy. Individual problems in gross anatomy, histology, hematology or neurology. Permission of instructor required. (Cred. and hrs. ar.) Dr. Boyden, Dr. Rasmussen, Dr. Kirschbaum, Dr. Hartmann, Dr. Sundberg, Dr. Williams
204. Research in Anatomy. (Gross anatomy, histology, hematology or neurology.) Permission of instructor required. (Cred. and hrs. ar.) Dr. Boyden, Dr. Rasmussen, Dr. Kirschbaum, Dr. Sundberg, Dr. Williams

BACTERIOLOGY AND IMMUNOLOGY

FIRST TERM

- 53.‡‡‡¶ General Bacteriology. (Page 16.†) (5 cred.; prereq. general chemistry and biology; lect. VI MTWThF, 214MH; lab. VII, VIII MTWThF.) Dr. DeKruif
- 116.‡‡‡ Immunity. (Page 16.†) (3 cred.; prereq. Bact. 53 or 101; VI, VII TWThF; 111MeS.) Dr. McLimans
201. Research in Bacteriology. (Page 16.†) (Cred. and hrs. ar.) Dr. Halvorson

SECOND TERM

- 102.‡‡‡¶ Medical Bacteriology. (Page 16.†) (4 cred.; prereq. Bact. 101 or 53; lect. VI MTWThF, 214MH; lab. VII, VIII MTWThF.) Dr. Ziegler
114. Molds, Yeasts, and Actinomycetes. (Page 16.†) (4 cred.; prereq. Bact. 53; lect. II MTThF, 214MH; lab. III, IV MTThF.) Dr. Skinner
201. Research in Bacteriology (Page 16.†) (Cred. and hrs. ar.) Dr. Skinner, Dr. Ziegler

MEDICINE

FIRST AND SECOND TERMS

DIVISION OF INTERNAL MEDICINE

Elective Courses

132. Diagnosis and Treatment of Diseases of the Lungs. Three lectures and two clinics per week. (Hospital wards and dispensary.) Lectures with or without hospital work. (Cred. and hrs. ar.; soph., jr., sr.; not less than 10 students.) Dr. Myers

† Page numbers refer to *Medical School Bulletin* for 1946-47, where further information may be found.

‡ A fee of \$7.50 is charged for this course.

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

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

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

136. The Respiratory Organs in Health and Disease. (Jr., sr.; limited to 6 students.)
Dr. Myers
140. Externship in Medicine. Limited to 54 students per term. 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 satisfactorily passed 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. Dr. Watson and staff

Courses for Graduate Students

201. Clinical Medicine. Dr. Watson, Dr. Fahr, Dr. Spink, Dr. Ebert, Dr. Aagaard, Dr. Hoffbauer
202. Diseases of the Cardiovascular Apparatus. Dr. Fahr
203. Research in Medicine. Dr. Watson, Dr. Fahr, Dr. Spink, Dr. Ebert, Dr. Hoffbauer, Dr. Aagaard
205. Tuberculosis. Dr. Myers
206. Clinical Conference. Weekly meeting on Friday at 9 a.m. Presentation of problem cases. Discussion of diagnosis and treatment and consideration of pertinent literature. (1 cred.) Dr. Watson, Dr. Ebert, and staff
207. Clinical Pathological Conference. Weekly meeting on Wednesday at 11 a.m. Presentation of clinical features, necropsy findings, and discussion. Medical and surgical cases. (1 cred.) Dr. Bell, Dr. Watson, Dr. Wangensteen, and staff
208. Clinical Radiological Conference. Weekly meeting on Monday at 9 a.m. Presentation and discussion of X-ray films from the medical service, with clinical correlation. (1 cred.) Dr. Rigler, Dr. Watson, and staff
211. Electrocardiographic Conference. One hour weekly. (1 cred.) Dr. Aagaard
- For other courses see *Graduate Medical School Bulletin*.

SECOND TERM

Elective Courses

129. Advanced Physical Diagnosis. (Prereq. Med. 101; jr.; not less than 3 or more than 6 students; Minneapolis General Hospital.) Dr. Peppard

DIVISION OF DERMATOLOGY

FIRST AND SECOND TERMS

Elective Courses

159. Assistantship, Dermatology, and Syphilis. (Prereq. jr. med. clerkship; limited to one student; Minneapolis General Hospital.) Dr. Sweitzer
160. Assistantship and Conference in Dermatology. (Prereq. jr. med. clerkship; limited to one student; University Hospitals.) Dr. Michelson and staff
161. Assistantship in Dermatology. (Prereq. Med. 124; limited to 2 students; Minneapolis General Hospital.) Dr. Sweitzer
163. Treatment of Syphilis. (Limited to 2 students; University Hospitals.) Dr. Michelson and staff
164. Seminar in Pathology. Histopathology of the skin. Clinical and pathological phases will be exemplified. (Prereq. Path. 102.) Dr. Michelson
165. Seminar in Dermatology. (Hrs. ar.) Dr. Michelson and staff

166. Allergy and Dermatology. (Cred. and hrs. ar.; limited to one student.) Dr. Michelson
167. Externship in Dermatology. (Limited to 10 students per term.) Dr. Michelson and staff

Courses for Graduate Students

225. Clinical Dermatology and Syphilology. Wards and Outpatient Departments of the University Hospitals, Veterans Hospital, Minneapolis General Hospital, and Ancker Hospital. Dr. Michelson and staff
226. Dermatology and Allergy. Conference twice weekly on diagnosis and treatment of skin conditions. Outpatient Department, University Hospitals. Dr. Michelson and staff
227. Histopathology of the Skin. Dr. Michelson and staff
228. Research in Dermatology and Syphilology. Dr. Michelson and staff

DIVISION OF CLINICAL LABORATORY MEDICINE

Courses for Graduate Students

235. Advanced Clinical Laboratory Medicine. Dr. Evans and staff
236. Research on Clinical Laboratory Problems. Dr. Evans and staff

OBSTETRICS AND GYNECOLOGY

Elective Courses

FIRST TERM

- 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 quarters. (6 cred.) Dr. McKelvey and staff

SECOND TERM

- 160b. Externship in Obstetrics and Gynecology. (Same as 160a, first term.) Dr. McKelvey and staff

FIRST AND SECOND TERMS

Courses for Graduate Students

201. Advanced Obstetrics and Gynecology. Part I. Required of first-year fellows. Dr. McKelvey, Dr. Lang, and staff
205. Advanced Obstetrics and Gynecology. Part II. Required of second-year fellows. Dr. McKelvey, Dr. Lang, and staff
209. Advanced Obstetrics and Gynecology. Part III. Required of third-year fellows. Dr. McKelvey, Dr. Lang, and staff
216. Research. Staff

OPHTHALMOLOGY AND OTOLARYNGOLOGY

FIRST AND SECOND TERMS

Required Courses

103. Laryngology. Lectures and demonstrations. (1 cred.; sr. med. stud.) Dr. Boies and staff
104. Clinic in Diseases of the Ear. Diagnosis and treatment of cases. (2 cred.; sr. med. stud.; 45 hrs.; University Dispensary.) Dr. Boies, Dr. Connor, Dr. Hochfilzer, Dr. Tangen, Dr. Hilger, Dr. Priest, Dr. Goltz, Dr. Hansen, Dr. Holmberg

105. Clinic and Conferences in Diseases of the Nose and Throat. Diagnosis and treatment of cases. (2 cred.; sr. med. stud.; 45 hrs.; University Dispensary.) Dr. Boies, Dr. Connor, Dr. Hochfilzer, Dr. Tangen, Dr. Hilger, Dr. Priest, Dr. Goltz, Dr. Hansen, Dr. Holmberg
106. Clinic in Diseases of the Eye. Diagnosis and treatment of cases. All senior medical students are required to have an ophthalmoscope on an individual basis. Dr. Hansen and staff

Elective Courses

121. Operative Clinic in Eye. Limited to 6 students. (1 cred.; T or Th 3:00 to 4:30.) Dr. Hansen and staff
122. Ophthalmoscopy. Limited to 8 students. (2 cred.; 2 sec.; 22 hrs.; days and hrs. ar. with departmental office.) Dr. Schwartz, Dr. Lindberg

PATHOLOGY

FIRST TERM

Elective Courses

107. Diagnosis of Tumors. (2 cred.; 8:00-10:00 MTWThF; 104 IA.) Dr. McCartney
- 107a. Surgical Pathology. (3½ cred.; 10:00-12:00 MTWThF; 104IA.) Dr. McCartney

SECOND TERM¶

Elective Courses

107. Diagnosis of Tumors. (2 cred.; 8:00-10:00 MTWThF; 104IA.) Dr. Hebbel
- 107a. Surgical Pathology. (3½ cred.; 10:00-12:00 MTWThF; 104IA.) Dr. Hebbel

FIRST AND SECOND TERMS

Required Courses

109. Clinical-Pathological Conference. Presentation of clinical data on selected cases with discussion of etiology and diagnosis. Required in clerkship period. Elective for others. (1 cred.; prereq. Path. 102; 4:00-5:00 F; 102 IA.) Dr. Bell and staff

Elective Courses

104. Autopsies. Postmortem technique; examination of fresh organs, etc. (Cred. and hrs. ar.; prereq. Path. 102.) Dr. Bell and staff
111. Conference on Autopsies. (1 cred.; prereq. Path. 102; 12:30-2:00 T; 104 IA.) Dr. Bell and staff
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.) Dr. Bell, Dr. Clawson, Dr. McCartney, Dr. Hebbel, Dr. Noble

PEDIATRICS

FIRST AND SECOND TERMS

166. Weekly Seminar for Detailed Discussion of Fundamental Subjects Related to Pediatrics. Dr. McQuarrie, Dr. Ziegler
- 171A. 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, and child psychiatry are attended each week. Limited to 10 students. (4 cred. for each 6-week

¶ Second term 107 and 107a are not repetitions of the first term but rather continuations.

- term; 9:00 to 12:00 MTWThF; University and Minneapolis General Hospitals.) Dr. McQuarrie, Dr. Adams, Dr. Jensen, Dr. May, Dr. Stoesser, Dr. Dwan, Dr. Bosma, and other members of the senior staff
- 171B. In-Patient Externship in Pediatrics. Patients in the pediatric wards at the University and Minneapolis General Hospitals 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. Limited to 20 students. (6 cred. for each 6-week term; 9:00 to 12:00 and 1:00 to 5:00 MTWThF, 8:00 to 12:00 Saturday.) Dr. McQuarrie, Dr. Adams, Dr. Jensen, Dr. May, Dr. Bosma, and junior staff members
208. Pediatric Research. Special problems in various subdivisions of the pediatric field may be selected for study. Students may collaborate with members of the staff or with other students where suitable arrangements can be made. Dr. McQuarrie, Dr. Adams, Dr. Jensen, Dr. May, Dr. Ziegler, and staff

PHARMACOLOGY

FIRST TERM

101. Introduction to Pharmacology. The principles underlying the structure, physicochemical properties, physiologic, therapeutic, and toxic action of substances, natural or synthetic, used as medicines. (2 cred.; prereq. at least one quarter of physiology; lect. 22 hrs.; ar.) Dr. Wright
108. Prescription Writing. The principles of prescription writing. (1 cred.; lect. 11 hrs.; ar.) Dr. Wright

SECOND TERM

103. General Pharmacology. A continuation of Pharm. 102. (1 cred.; lect. 11 hrs. ar.) Dr. Cranston
104. General Pharmacology. A continuation of Pharm. 103. (1 cred.; lect. 11 hrs.; ar.) Dr. Cranston

FIRST AND SECOND TERMS

8. Elementary Pharmacology. For student nurses. (3 cred.; lect. 22 hrs.; lab. 22 hrs.) Dr. Wright, Dr. Chadbourn, Mr. O'Dell
102. General and Experimental Pharmacology. A detailed study of the drugs important in medical practice. (6 cred.; lect. 44 hrs.; lab. 66 hrs.) Dr. Bieter, Dr. Wright, Dr. Cranston, Dr. Chadbourn, Mr. O'Dell
124. Pharmacology of Special Systems. Lectures and conference on the more detailed pharmacology of special organ systems and their clinical applications. (3 cred.; prereq. Pharm. 101, 102, 103, and 104 or equiv.; hrs. ar.) (a) First term, pharmacology of cardiovascular drugs, Dr. Wright; (b) Second term, pharmacology of autonomic antispasmodic and antihistaminic drugs. Dr. Bieter, Dr. Cranston
203. Research in Pharmacology. For graduate and advanced students. (Cred. and hrs. ar.) Dr. Bieter, Dr. Wright

NOTE—The complete sequence of courses in Pharmacology for medical and dental students is 101, 102, 103, 104, and 108. All of these courses can be taken during the Summer Session by students who meet the usual prerequisites required in medical and dental schools. Other students require special permission from the staff.

PHYSIOLOGY

FIRST TERM

- 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. I MTWThF, 12MeS; dem. II MTWThF, 214MH.) Dr. King
113. Problems in Physiology. Each student will be assigned topics for special laboratory study or arrangements may be made for a survey of research techniques, including literature assignments. (Cred. ar.; prereq. 103, 104 or equiv. plus permission of instructor; hrs. ar.) Graduate staff
- 135a. Conference in Physiology. Various topics in the field of physiology will be considered in a seminar type of course. (Cred. ar.; prereq. 103, 104 or equiv. plus permission of instructor; hrs. ar.) Graduate staff
203. Research in Physiology. (Cred. ar.; prereq. 103, 104 or equiv. plus permission of instructor; hrs. ar.) Graduate staff

SECOND TERM

113. Problems in Physiology. Same as first term.
- 135a. Conference in Physiology. Same as first term.
203. Research in Physiology. Same as first term.

PHYSIOLOGICAL CHEMISTRY

FIRST TERM

- 100.‡ Physiological Chemistry. (7 cred.; jr., sr.; prereq. organic and physical chemistry and physics; lect. IV MTWThFS, VI MWThF, 15MeS; lab. I-II-III MTWTh, 310MH.) Dr. Armstrong, Dr. Barnum, Dr. Carr
153. Problems in Physiological Chemistry. Special work arranged with qualified students. May be taken one or more quarters. (Cred. and hrs. ar.; prereq. 100, 101.) Dr. Armstrong, Dr. Barnum, Dr. Carr
205. Research in Physiological Chemistry. (Cred. and hrs. ar.) Dr. Armstrong, Dr. Barnum, Dr. Carr

SECOND TERM

- 101.‡ Physiological Chemistry. (6 cred.; jr., sr.; prereq. 100; lect. IV MTWThF, VI MWF, 15MeS; lab. I, II, III MTWTh, 310MH.) Dr. Glick, Dr. Cohen, Dr. Carr
153. Problems in Physiological Chemistry. (See 153, first term.) (Cred. and hrs. ar.; prereq. 100, 101.) Dr. Glick, Dr. Cohen, Dr. Carr
205. Research in Physiological Chemistry. (Cred. and hrs. ar.) Dr. Glick, Dr. Cohen, Dr. Carr

PSYCHIATRY AND NEUROLOGY

Elective Courses for Nonmedical Students

FIRST TERM

171. Descriptive Neuropsychiatry. (Social Work 237.) (2 cred.; 22 hrs.; prereq. Neuropsy. 70 or Psy. 144-145.) Dr. Baker, Dr. Aldrich
173. Mental Hygiene Aspects of Public Health Nursing. For graduate nurses only. (3 cred.; 33 hrs.) Miss Shalit

† Will not count for credit for admission to the Medical School except by permission of the dean of that school.

‡ The student must purchase a \$5 physiological chemistry card from the bursar in the Administration Building. No student will be assigned a desk in the laboratory until he presents this card. The cost of special chemicals, nonreturnable equipment, and breakage will be charged against the deposit.

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

SECOND TERM

70. Introductory Psychiatry. (Social Work 235.) For upper group only. (3 cred.; 33 hrs.; prereq. elem. psy. and soc.) Dr. Hinckley

Elective Courses for Medical Students

FIRST AND SECOND TERMS

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 quarter. 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 quarter. 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 Students

208. Clinical Neurology. Supervised practice, inpatient and outpatient services. (Cred. and hrs. ar.) Dr. Baker and staff
- 208x. Clinical Psychiatry. Supervised practice, inpatient and outpatient services. (Cred. and hrs. ar.) Dr. Hastings and staff
209. Research in Neurology. (Cred. and hrs. ar.) Dr. Baker
212. Survey of Neuropathology. (2 cred.; prereq. Neuropsy. 210; 19MH.) Dr. Baker
216. Neuropsychiatric Case Conference. (Cred. and hrs. ar.) Dr. Hastings and staff
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.) Dr. Baker
228. Research in Neuropathology. (Cred. and hrs. ar.) Dr. Baker

SCHOOL OF PUBLIC HEALTH†

FIRST TERM

- 50¶. Public and Personal Health. Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings. (3 cred.; open to jrs. and srs. who have not taken 3, 4, 52, 53 or 100 or G.C. 10C Human Biology in the General College; no prereq.; I MTWThF; 129MH.) Dr. Bates
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 G.C. 10C and 4, or G.C. 10C and 51, or 50, or 53 or 100 will be waived for teachers and school nurses, but cred. granted only after completion of prereq.; II MTWThF; 15MeS.) Miss Grout
62. Principles of Public Health Nursing. Trends, principles, and techniques in public health nursing service including family health guidance. (3 cred.; public health nurses; prereq. 53 or 100 or equiv. but may be taken with 100; I MTWThF; 214MH.) Miss Taylor

† Room schedule posted on bulletin board outside of 121 Millard Hall.

¶ No credit is granted for this course in the major sequence in public health nursing.

- 66.††§ Field Practice in Rural Nursing. Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62, and 67.) Miss Vroom
- 67.††§ Field Practice with Family Health Agency. Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics, and in home visiting. This includes bedside care of all types of cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62.) Miss Vroom
- 80.‡ Elementary Vital Statistics. Sources of data on population, mortality, morbidity, and natality. Calculation of rates and graphical comparison of time and age trends. (3 cred.; public health nurses and special permission of instructor; VI-VIII MWF; 129MH.) Miss Roberts
95. Nutrition in Public Health Nursing. (Same as H.E.76.) Principles of nutrition applied to family teaching, consideration of diet for normal living, at special periods in life, and for certain diseases. Discussion of diet problems of low income groups. (3 cred.; prereq. 62 or may be taken concurrently; I MTWThF; 129MH.) Dr. Mickelsen
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 presocial work; lect. III MTWThF, 214MH; rec. IV MTWF, 214MH.) Dr. Thomson
101. Public Health Administration and Field Work. A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; sr. med. stud. only.) Dr. Thomson and associates
125. The Community Health Education Program. A course intended primarily for those preparing for leadership in community health education to include organization, administration, and evaluation of community health education programs and the selection, preparation, and use of media commonly employed in health education. (3 cred.; prereq. 53 or 100 or 104 and 106, or to be taken concurrently with 106; VIII MTWThF; 129MH.) Miss Grout
170. Supervision in Public Health Nursing. Nature of supervision, classification of activities; methods of supervision, including field visitation, individual counseling, group conferences, staff education programs, administrative functions of supervisors, preparation and selection of supervisors. (3 cred.; prereq. 53 or 100, 61, 63, and experience in public health nursing, or by permission; IV MTWThF; 129MH.) Miss Taylor
171. Problems in Public Health Nursing. For advanced students who wish to work on special problems in public health nursing. (Cred. ar.; prereq. 170 or permission of instructor.) Miss Taylor
- 185.††† Workshop for Public Health Nursing Administrators, Supervisors and Consultants. (Two weeks, July 6-July 22.) Study, discussion, analysis, and evaluation of

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

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

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

§ Students must maintain a C average in theory completed before they are admitted to any field work.

different administrative methods, techniques, problems and workable solutions. Enrolment limited to 25. (3 cred.; prereq. 62-63, 171 or may be taken concurrently.) Miss Taylor and guest lecturers

186. † Workshop for Public Health Nursing Supervisors and Consultants in Cancer Control. (June 14-July 2.) Extent of problem, case finding, early diagnosis, treatment, after care, rehabilitation, to include special emphasis on public health aspects of cancer control. Enrolment limited to 25. (3 cred.) Miss Peterson and guest lecturers

SECOND TERM

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 sanatoria 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.) Dr. Myers
- 62-63. ¶ Principles of Public Health Nursing. Trends, principles, and techniques in public health nursing service including family health guidance. Organization of public health nursing services; program planning; evaluation; professional problems in public health nursing. (3 cred.; public health nurses; prereq. 53 or 100 or equiv. but may be taken with 100; II-III MTWThF; 129MH.) Miss Mickey
63. Principles of Public Health Nursing II. Organization of public health nursing services; program planning; evaluation; professional problems in public health nursing. (3 cred.; public health nurses; others admitted by permission; prereq. 53 or 100 or equiv. but may be taken concurrently; I MTWThF; 129MH.) Miss Mickey
65. †¶§ Field Practice in School Nursing. Credits allowed according to experience in this field. Working with the school nurse, the student observes and participates in the activities included in the school nursing program; special attention to organization, relationships, techniques, methods of informal health teaching, provision for handicapped children, and home visiting. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62, and 67.) Miss Vroom
66. †¶§ Field Practice in Rural Nursing. Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62, and 67.) Miss Vroom
67. †¶§ Field Practice with Family Health Agency. Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics and in home visiting. This includes bedside care of all types of cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53 or 100, 62.) Miss Vroom
101. Public Health Administration and Field Work. A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; sr. med. stud. only.) Dr. Anderson and associates

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

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

§ Students must maintain a C average in theory completed before they are admitted to any field work.

¶ For students with 6 months' public health nursing experience only. Others take P.H. 62 first term and P.H. 63 in second term.

102. Environmental Sanitation I. Methods for promoting man's health and comfort by controlling his environment; water supply sanitation, food sanitation, pollution abatement; sewage, excreta, and waste disposal; bathing place sanitation, air hygiene, illumination, housing, control of insect and animal vectors of disease, industrial hygiene and sanitation. (3 cred.; sr., grad.; prereq. 50 or 51 or 53 or 100 or permission, or may be taken concurrently with any of these; IV MTWThF; 214MH.) Mr. Pierce
106. Public Health Administration. Structure, basic functions, and activities of public health agencies; public health laws and regulations; administrative procedures in public health practice; relationship to other governmental and social activities. (3 cred.; physicians, engineers, nurses, social workers, and others by arrangement; prereq. 53, 100, or equiv. or to be taken simultaneously with any of these prereq.; I MTWThF; 214MH.) Dr. Anderson
171. Problems in Public Health Nursing. For advanced students who wish to work on special problems in public health nursing. (Cred. ar.; prereq. 170 or permission of instructor.) Miss Mickey and associates

BIOSTATISTICS

FIRST TERM

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. Course 111 will be taken concurrently. (3 cred.; prereq. 18 cred. in biol. sci. or math. through anal. geom.; I MWF, 111MeS; IV MW, 113MeS.) Mr. Treloar
- 111.† Biometry Laboratory. Practical training in machine calculation and statistical techniques. To be taken concurrently with Course 110. (2 cred.; lab. 12 hrs. ar.; 118MH.) Mr. Treloar, Miss Roberts

RADIOLOGY

FIRST AND SECOND TERMS

Courses for Undergraduate and Graduate Students

109. Externship in Roentgen Diagnosis and Radiation Therapy. Participation in the work of the X-Ray Department both in technique and in interpretation. The student will be given opportunity to observe and do some fluoroscopy, to assist in x-ray technique, and to observe x-ray interpretation. (Cred. and hrs. ar.; jr., sr., grad.) Limited to 8 students. Permission required for registration.
- 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.; jr., sr., grad.; II M; Todd Amphitheater UH.) Dr. 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.; jr., sr., grad.; II T; Eustis Amphitheater UH.) Dr. 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.; jr., sr., grad.; II S; Todd Amphitheater UH.) Dr. Rigler and staff.

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

- 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.; jr., sr., grad.; VI F; Todd Amphitheater UH.) Dr. Peterson

Courses Primarily for Graduate Students

200. Research in Roentgenology. Problems in roentgen diagnosis. (Cred. and hrs. ar.) Dr. Rigler and staff
204. Research Related to Radiation Therapy. (Cred. and hrs. ar.) Dr. Rigler 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.) Dr. 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 thoroly discussed. (Cred. and hrs. ar.) Dr. Stenstrom and staff
209. Roentgen Diagnosis. The theory and practical application of roentgen diagnostic methods to medical cases in general. (Cred. and hrs. ar.) Dr. Rigler and staff
210. Roentgen Technique. A consideration of the theory and practical application of the principles of roentgen technique including the study of x-ray machines and x-ray tubes, exposure, technique, and darkroom work. (Cred. and hrs. ar.) Dr. Rigler and staff
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.) Dr. Stenstrom and staff

MEDICAL TECHNOLOGY

Before registering, students should consult special advisers in the Medical Technology Office, M-519, University Hospitals.

OCCUPATIONAL THERAPY

Consult Occupational Therapy Office, 3302 Powell Hall, University of Minnesota, Minneapolis 14.

PHYSICAL THERAPY

Consult Physical Therapy Office, W-300, University Hospitals.

SURGERY

FIRST AND SECOND TERMS

110. General Surgery Externship. (Limited to 30 students.) Students who have completed their sophomore or junior years in, or recent graduates of an approved medical school are eligible. The facilities of the surgical staffs of the University Hospitals and Minneapolis General Hospital will be available for the instruction of registrants.

For students in the University of Minnesota Medical School the externship may, at the discretion of the Department of Surgery, be substituted for part of the required surgical clerkships of the regular school year. Students from other medical colleges, with the approval of their deans, may receive subject or time credit in keeping with the policies of their respective institutions.

Interesting cases will be assigned to externs for the history taking, physical diagnosis, diagnostic procedures, provisional diagnosis and consideration of treatment.

Externs will be permitted and encouraged to participate in operations on patients they have examined.

In addition to his duties on the surgical wards and in the operating room, the extern may select from among the following such courses as meet his special interest not to exceed one-fourth time. These courses may be taken separately by individuals who are qualified and who are not externs. In the latter case tuition will be charged on a credit hour basis. (See statement, Medical Students Desiring Time Credit, page 88.)

- 110a. Tumor Conference: Bi-weekly presentation of interesting tumor cases to be presented and discussed by combined roentgen therapy, surgical, pathological and dermatological staffs.
- 110b. Surgery Reading Course: Weekly meeting for presentation by externs of assigned topics of surgical interest. Free discussion by staff and externs will be encouraged.
- 110c. Medico-Surgical-Pathological Conference: Weekly combined meetings of medical, surgical, roentgenological staffs in which postmortem findings of particularly interesting and instructive cases are discussed.
- 110d. Roentgenological-Surgical Conference: Films of all surgical patients presenting interesting roentgen findings are reviewed and discussed by the combined staff. This is part of the weekly surgical conference. Following review of films, interesting histological specimens (surgical) of the week. Review of all postmortem examinations of the week, by Pathology Department with discussion of autopsy cases by the surgical staff.
- 110e. Out-patient Surgery Clinic, General Surgery and Proctology: Externs will be assigned daily to Out-patient Clinic and will participate in the care of surgical patients under staff supervision. Proctology clinic will be held two mornings a week.
- 110f. Applied Surgical Anatomy: Weekly demonstrations on cadavers of regional anatomy and correlation with practical surgical application. Externs may assist in the dissections under supervision.
- 110g. Emergency Traumatic Surgery: Provisions will be made for externs interested in obtaining experience in acute traumatic surgery to participate in the care of such patients under supervision of the hospital staff at the Minneapolis General Hospital.
- 110h. Surgery Literature: Externs will attend weekly sessions in which current surgical literature is reviewed by the surgical staff.
- 110i. Motion Pictures on Surgical Subjects: A weekly presentation of approved motion pictures on interesting surgical subjects with discussion of attending surgical staff.
- 110j. Physiological-Surgical Conference: Weekly combined meeting of physiological and surgical staff, in which cases of interest are discussed.
- 110k. Provision will be made for externs to work on assigned problems in the experimental laboratory or in clinical research under supervision.
- 110m. Pediatric-Surgery Conference: Externs may attend meeting of combined pediatric and surgical staffs held bi-weekly.
- 110n. Tumor Lectures: A series of lectures on common forms of neoplasms and emphasis on the modes of treatment by surgery and roentgen therapy.
- 110o. Medical History: Seminars in medical history by externs and staff.

Required Courses Which Are Part of Externship or May Be Taken Separately

- 129. Surgical Clinics: Amphitheater clinic demonstrating surgical conditions on hospital patients. One hour once a week.
- 129a. Daily Meetings with Surgical Residents: Problem cases of interest will be discussed by residents on the service with small groups of externs. Histories and physical examinations checked by resident will be discussed with the individual extern responsible for the work-up.

SCHOOL OF NURSING¶

COURSES AND FEES

Graduate Nurses

The program of courses in the 1948 Summer Session has been planned to meet the needs of graduate nurses who hold head nurse and supervisory positions, for nursing service administrators, and for nursing school administrators and faculty members. The student may complete courses totaling approximately eight or nine credits in the six-week period from June 15 through July 23. She may also carry approximately eight credits in the second term, July 26 through August 28. Students who have been admitted as candidates for the B.S. degree in Nursing Education register in the College of Education and pay Summer Session fees. See page 14. Graduate nurses planning to register only for Summer Session courses register in the School of Nursing and pay Summer Session fees. See page 14.†

Nursing Education Majors

Nursing education majors may register for courses in their major during the Summer Session.

College graduates who have completed a basic professional program in nursing may begin specialization in the nursing education major in Summer Session.

Students register in College of Education and pay Summer Session fees. See page 14.

Degree Curriculum in Professional Nursing

High school graduates and transfer students from colleges or universities may register for preprofessional courses§ in the Summer Session. Students register in the College of Science, Literature, and the Arts and pay Summer Session fees. See page 14.

Students in the professional portion of the curriculum§ register in the School of Nursing and pay regular School of Nursing fees.

Advanced Clinical Curricula for Professional Nurses

(Medical, obstetric, operating room, pediatric, pediatric and communicable disease, psychiatric, rural hospital, surgical, tuberculosis.)

The clinical year in the advanced professional curricula begins in the fall quarter. Certain prerequisites may be taken in the Summer Session. See *Bulletin of School of Nursing*.

Graduate nurses who have been admitted to an advanced clinical curriculum as candidates for the B.S. degree in nursing education register in the College of Education and pay Summer Session fees. See page 14.

Certificate Curricula in Clinical Nursing for Professional Nurses

The certificate curricula in advanced medical, obstetric, operating room, pediatric, rural hospital, surgical, and tuberculosis nursing begin in the fall quarter, 1948.

Students are admitted to the certificate course in advanced psychiatric nursing in the fall quarter, 1948 and spring quarter, 1949.

Graduate nurses who are candidates for an advanced clinical program leading to a certificate may complete the prerequisites of psychology and sociology by registering in the School of Nursing and paying Summer Session fees. See page 14.

Graduate nurses who have been admitted to an advanced clinical program leading to a certificate register in the School of Nursing and pay regular advanced clinical fees. See *School of Nursing Bulletin, 1947-49, page 45*.

† The Summer Session may be used to supplement deficient basic nursing experience.

§ *School of Nursing Bulletin, 1947-49, pages 13, 14.*

¶ For courses in Public Health Nursing, see pages 96-99.

Certificate Curriculum in Practical Nursing

The School of Nursing offers a four-quarter program leading to a certificate in practical nursing. Applicants are admitted at the beginning of the summer and winter quarters only. Applicants must be high school graduates and should be between 18 and 35 years of age. Those over 35 years of age will be considered on an individual basis. Applicants may be either married or single. Application should be made in writing to the Dean of Admissions and Records, University of Minnesota, Minneapolis 14, Minnesota. Students register in the School of Nursing and pay regular practical nursing fees. Tuition: resident, \$30; nonresident, \$40; incidental fee, \$10.65; matriculation deposit, \$5; books, approximately \$10; uniforms, approximately \$35. For additional information see *School of Nursing Bulletin*, 1947-49, pages 47-49.

FIRST TERM

- Nurs.Ed.60. Ward Administration. The organization of the hospital; principles of administration and their application to ward management; analysis and maintenance of nursing service; selection, orientation, assignments and motivation of personnel; planning and conducting clinical teaching programs. (4 cred.; sr., grad. nurse; no prereq.; III, IV MTWF; 111MeS.) Mrs. Randall
- Nurs.Ed.62. Personnel Program in Schools of Nursing. Survey of principles and techniques of personnel work applied to problems in schools of nursing. The relationship of such topics as individual differences, human behavior, personality, emotions, and intelligence to the problems of personnel guidance. Study of such techniques as psychological tests, personnel records, orientation periods, remedial programs, and counseling interviews in schools of nursing. (3 cred.; sr., grad. nurse; no prereq.; I MTWThF; PoH Amph.) Miss Johnston
- Nurs.Ed.63. Motion Study. A course designed to apply the science of motion study to the technique of nursing. The student is taught to analyze critically the present methods used in nursing, and to devise better ways. Motion picture method of analysis, lectures, and laboratory work. (2 cred.; sr., grad. nurse; no prereq.; VII, VIII MW; 133Ph.) Mr. Lifson
- Nurs.Ed.65. Analysis of Nursing Care. Studies of nursing practice. Each student works on an individual problem with a view to designing an improved nursing procedure. Appropriate technics are used such as: motion and time study; fast study; bacteriologic, physical, chemical, physiologic study. (3 cred.; jr., sr., grad. nurse; no prereq.; I MTWThF; 113MeS.) Miss Enos
- Nurs.Ed.68. Construction and Use of Examinations and Other Measurements in Basic Nursing Courses. (3 cred.; sr., grad. nurse; no prereq.; II MTWThF; 111MeS.) Miss Johnston
- Nurs.Ed.72. Principles of Learning and Methods of Teaching. Study of learning situations in the basic professional program in nursing. Sources, selection, and organization of instructional materials; evaluation of nursing care; content and methods of clinical teaching; measurement of outcomes. (3 cred.; grad. nurse; no prereq.; II MTWThF; 2309PoH.) Miss Boyle
- Nurs.Ed.73. Principles of Economics in Nursing Service Administration. A study of the principles of business administration in their application to hospital organization and management. (1 cred.; sr., grad. nurse; no prereq.; VII TTh; 113MeS.) Miss Gorgas
- Nurs.Ed.85. Fundamentals of Nursing Service Administration. Study of principles of administration applied to the operation of nursing service in hospitals. Organization; administrative relationships; personnel policies, practices, relationships; staff education; income and expenditure, budgeting, salary schedules; public relations; records

and reports. (3 cred.; grad. nurse; prereq. professional nursing experience or consent of instructor.) Miss Goodale

Sec. 1, VI-VII MWF, open to professional nurses currently employed in nursing service administration, 2309PoH

Sec. 2, II MTWThF, open to professional nurses with minimum of one year of junior administrative experience, 113MeS

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. experience on faculty of a school of nursing; III MTWThF; 113MeS.) Miss Harrington

Note: See also Ed.T.51A. Special Methods of Teaching in Schools of Nursing. College of Education, Methods and Directed Teaching, page 120, first term, page 121, second term.

Note: See also Physics A, for nurses, page 44.

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: Dr. Shellman, Dr. Listiak, Dr. Yock, Dr. Brecht, Dr. Holte, Dr. McBride, Dr. Peterson, Dr. Tam, Dr. Wilkinson.

Second Term: Dr. Shellman, Dr. Yock, Dr. Brecht, Dr. Holte, Dr. McBride, Dr. Peterson, Dr. Tam, Dr. Wilkinson.

Tuition fees for the quarter are: resident, \$75, nonresident, \$120. Credit hour fee: resident \$6.25; nonresident, \$10. There will be the usual incidental fee of \$10.65 for the Coffman Memorial Union, the Health Service, the *Minnesota Daily*, etc. Deposit fee for the summer quarter only, \$2.

COLLEGE OF EDUCATION

Courses in elementary and secondary education listed in the following pages may be used for *renewal of teaching certificates*. Former teachers re-entering the profession should consult with elementary and secondary education advisers or with the dean's office, College of Education, concerning a program for renewal of certificates.

Students reading this section of the bulletin should note that under Curriculum and Instruction, Educational Administration, Educational Psychology, and Methods and Directed Teaching, the courses are grouped for those interested in elementary, secondary, and higher education fields. Under each division courses of general interest are listed *General Courses* and these are followed by the offerings in *Elementary Education*, *Secondary Education*, and *Higher Education*.

Professional courses in education presuppose completion of Junior College requirements in the University of Minnesota or the equivalent in colleges of similar grade elsewhere. Graduation from the advanced course of Minnesota state teachers colleges is accepted as equivalent. Students 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 *College of Education Bulletin*.

Students expecting to become candidates for a degree should seek as early as possible the advice of the major adviser in the department concerned in order to learn the requirements of the special curriculum they will need to complete.

STUDENTS' WORK COMMITTEE

Undergraduate students with questions concerning program adjustments and substitutions for required work should consult their advisers or the chairman of the Students' Work Committee. The office of the chairman in the first term will be 206D Burton Hall (Miss Alexander), and in the second term, 202B Burton Hall (Miss Edwards).

WORKSHOPS

Graduate Credit for Workshops—The amount of graduate credit in workshops which may be used on a Master's degree program is limited. Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate programs.

Curriculum Workshop, Minneapolis Group—In the first term Minneapolis teachers and other selected applicants will be accepted for a Workshop on Curriculum Problems planned jointly by the College of Education and the Minneapolis Public Schools. Interested students should write to the director, Mr. Robert Gilchrist, Assistant Superintendent in Charge of Secondary Education, Minneapolis, or to the Dean's Office, College of Education, University of Minnesota, Minneapolis 14. (See Ed.C.I. 172, Minneapolis Group.)

Curriculum Workshop, Experimental Schools—A second curriculum workshop for the first term has been planned for staff members from the Minnesota schools cooperating in the experimental curriculum study under the College of Education. Applicants for this workshop should apply to the Workshop Director, 222 Burton Hall, University of Minnesota. (See Ed.C.I. 172, Experimental Schools.)

Music Education Workshop—In the first term a General Music Education Workshop will emphasize problems in elementary school music. Experienced teachers, graduate students, and selected seniors will work together on group and individual problems in music education. (See Mu.Ed. 110E.)

Workshop in Higher Education—The workshop for the study of problems of teacher education in the liberal arts colleges and teacher training institutions will be scheduled from June 14 to July 9, jointly sponsored by the College of Education and the North Central Association of Colleges and Secondary Schools. Applicants should write to the Dean's Office, College of Education, University of Minnesota, Minneapolis 14, for permission to register. (See Ed.C.I. 228.)

Workshop in Rural Education—A workshop for rural teachers and administrators has been planned for the second term as a full day's program for nine credits. Students will register for Ed.C.I. 117, Rural Education for Administrators and Teachers, 3 credits, and for 6 credits in Ed.C.I. 187, Workshop in Rural and Village School Problems. The core course will be scheduled for nine o'clock daily, and will be followed by group and individual projects emphasizing special needs of rural teachers. Application forms for admission to the workshop will be sent on request. Interested students should write to the Dean's Office, College of Education, University of Minnesota, Minneapolis 14.

SUMMER DEMONSTRATION HIGH SCHOOL

The University High School will be in session during the first term of the Summer Session. Instruction will be offered in English, mathematics, general science, chemistry, physics, biology, history, social studies, typing, art, speech, home economics, Latin, Spanish, and driver education. The school is a six-year high school comprising grades seven to twelve, with courses organized to provide individual attention to the needs and capacities of the pupils.

Admission to the Summer Session is open to any pupil of normal high school age. Children of teachers or other professional workers who are attending the Summer Session of the University are especially welcomed in the summer term of the University High School. For information regarding fees and registration procedure, address the Principal's Office, University High School, Minneapolis 14, Minnesota.

Students registered in Ed.T. 52 will be assigned to observation and directed teaching in the classes of the high school. The facilities of the school are available to the college classes in special methods and to other classes for demonstration purposes. (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 of the Summer Session. This school will be staffed by the principal and teachers of the Tuttle School which is used as the demonstration elementary school of the College of Education by a co-operative agreement with the Board of Education of the city of Minneapolis. The school, conducted on an activity basis, may be observed by students of elementary school methods and supervision. A laboratory course in elementary school practices is available. (See Ed.C.I. 186.) (I, II, III, IV MTWThF; Tuttle School, Talmadge Avenue and Eighteenth Avenue Southeast.)

NURSERY SCHOOL AND KINDERGARTEN

The Institute of Child Welfare maintains a nursery school and kindergarten in the first term of the Summer Session which is open to children under the conditions described on page 137. These schools are also available for demonstration and observation. Courses,

offered by the institute and listed on page 137, are given for teachers who wish nursery school and kindergarten training and for others interested in child development.

MINIMUM FEE FOR GRADUATE STUDENTS

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

SPECIAL FEES

By action of the Board of Regents, a fee of \$1.50 per credit is charged for all courses concerned with methods or problems of teaching. These fees are used in the provision of demonstration and practice facilities, and are charged for any course in this classification, whether or not observation is required for that particular course. The curriculum laboratory, the demonstration schools, and radio and visual materials are partially provided through these fees.

DETAILED DESCRIPTION OF COURSES

For detailed description of courses and curricula in education see the *Bulletin of the College of Education*.

NOTICE CONCERNING STARRED COURSES

Graduate students who wish to work on individual problems to count toward the nine credits in problems courses required for the Master's degree under Plan B, may register for this credit in any course starred in the following list. Other students taking these courses will not be held to the same quality of individual problems work, nor will written reports always be required of them. (See page 18.)

GENERAL COURSES

FIRST TERM

- Ed.51A.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed. 51C or consent of instructor; VI MTWThF; 210UHS.) Mr. Nickerson
 Ed.51B.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed. 51A or consent of instructor; VII MTWThF; 209UHS.) Mr. Mitchell
 Ed.51C.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; VII MTWThF; 210UHS.) Mr. Kenneth Anderson

SECOND TERM

- Ed.51A.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed. 51C or consent of instructor; V MTWThF; 206Pt.) Mr. Van Wagenen
 Ed.51B.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed. 51A or consent of instructor)
 Sec. 1, VI MTWThF, 200Pt, Mr. Mitchell
 Sec. 2, VII MTWThF, 200Pt, Mr. Mitchell
 Ed.51C.‡ Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; VI MTWThF; 110UHS.) Mr. Keller
 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; ar. MeS.) Ar.

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

AGRICULTURAL EDUCATION

FIRST TERM

- Agr.Ed.82.‡ Methods in Teaching Agriculture. Fundamentals of method in teaching as related to teaching agriculture in secondary schools. Organizing subject matter of daily work; selection and manipulation of devices. Classroom and laboratory method. Specific plans for teaching high school agriculture. (3 cred.; sr.; prereq. 81; II MTWThF; 301Hort[UF].) Ar.
- Agr.Ed.121. Enterprise Analysis. Primarily for teachers of agriculture and others who have had experience in planning farming programs. Analyzing enterprises in agriculture as a basis for identifying problems and distributing them in the horizontal course of study. (3 cred.; ar.; 205Hort[UF].) Ar.
- Agr.Ed.137. Adult Education in Agriculture. The organization, objectives, and techniques for conducting part-time and evening schools for out-of-school farm youth and adult farm people. (1 to 3 cred.; III MTWThF; 301Hort[UF].) Ar.
- Agr.Ed.171. Procedures in Teaching Agriculture. Especially for teachers of Veterans on-the-Farm Training program. Emphasizes working out the problems in detail in order that results might be directly applicable to a particular farming situation. Evaluation of procedure on a basis of improved farming practices. (3 cred.; prereq. consent of instructor; ar.; 205Hort[UF].) Mr. Peterson
- Agr.Ed.221. Field Problems. Provision for study and development of special problems in the field of the student's individual choice. (3 cred.; ar.; 205Hort[UF].) Mr. Peterson
- Agr.Ed.232.* Research in Agricultural Education. Investigations in problems of teaching agriculture in secondary schools. Selecting problems, preparing bibliographies, analyzing and interpreting data, and preparing manuscripts. Designed especially for meeting the Plan B requirement. (3 cred.; ar.; 205Hort[UF].) Mr. Peterson
- Agr.Ed.286. Special Problems in Agricultural Education. Analysis and discussion of special problems of individual teachers. Opportunity for study of specific local areas of development. (3 cred.; ar.; 205Hort[UF].) Mr. Peterson

SECOND TERM

- Agr.Ed.91.‡ Supervised Teaching Experience. 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.; ar.) Mr. Peterson
- Agr.Ed.221. Field Problems. (See first term listing for description.) (3 cred.; ar.; 205Hort[UF].) Mr. Peterson
- Agr.Ed.232.* Research in Agricultural Education. (See first term listing for description.) (3 cred.; ar.; 205Hort[UF].) Mr. Peterson

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 experiences.

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

FIRST TERM

- ArtEd.17. Survey of Art in Life and Education. For elementary, child welfare, and other education majors. A combination lecture and laboratory course for the layman, designed to develop understanding and appreciation of aspects of art important in contemporary life and education. (3 cred.; no prereq.; I-II MTWThF; 109J.) Mr. Gayne
- ArtEd.155. Art in Society and Education. Lectures, readings, discussions exploring relationships between art and society. The philosophy, ideas, and achievements in painting and sculpture are studied as basic materials for planning educational experiences of social significance. (3 cred.; prereq. consent of instructor; VII MTWThF; 109J.) Mr. Torbert
- ArtEd.183. Philosophy of Art Education. A course in which teaching experiences and professional education courses are synthesized in the light of the dynamic characteristics of life and art today. (3 cred.; prereq. consent of instructor; II MTWThF; 104J.) Mr. Severino
- ArtEd.184.‡ Advanced Course in Methods and Supervision of Art in the Elementary School. (3 cred.; sr., grad.; prereq. 51C-A-B or 71C-A-B, or consent of instructor; IV MTWThF; 109J; and observation in Tuttle Demonstration School.) Mr. Gayne
- ArtEd.189. The Application of Esthetic Theory in Public Education. An examination of contemporary theories of art, their psychological and philosophical foundations as revealed through experimental evidence, and the application of tested principles of art to improving programs of modern general education at elementary, secondary, and college levels. Open to teachers, supervisors and administrators with or without previous experience in art who are concerned with making art function in general education. (3 cred.; I MTWThF; 104J.) Mr. Severino
- ArtEd.284. Reading and Research in Art Education. (Cred. ar.; grad.; ar.; ar.) Mr. Gayne and staff
- ArtEd.295. Special Problems in Art Education. Including technical art projects involving advanced studio practice. (Cred. ar.; grad.; ar.; ar.) Mr. Gayne and staff

SECOND TERM

- ArtEd.19. Survey of Art in Life and Education. See ArtEd. 17 above. (3 cred.; no prereq.; II-III MTWThF; 109J.) Mr. Gayne
- ArtEd.284. Reading and Research in Art Education. (Cred. ar.; grad.; ar.; ar.) Mr. Gayne and staff
- ArtEd.295. Special Problems in Art Education. (Cred. ar.; grad.; ar.; ar.) Mr. Gayne and staff

CURRICULUM AND INSTRUCTION

FIRST TERM

General Courses

- Ed.C.I.104.‡ Adult Education. (3 cred.; jr., sr., grad.; IV MTWThF; 100NH.) Mr. Nolte
- Ed.C.I.105.‡ Visual Aids in Teaching. (3 cred.; jr., sr., grad.; II MTWThF; 101WeH.) Mr. Luce
- Ed.C.I.129.‡ Principles and Problems of Teaching Social Hygiene. Emphasis will be placed on methods of teaching social hygiene in the public schools and materials for instructional use in the elementary and secondary schools. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed.; III MTWThF; 360SBH.) Dr. Pearce, Mr. Griffiths

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

- Ed.C.I.145.‡ Remedial Reading. (3 cred.; prereq. Ed.C.I. 143 or 144 or 159; IV MTWThF; 107TNM.) Mr. Tinker
- Ed.C.I.172.‡§ Workshop in Curriculum Problems—Minneapolis Group. Jointly planned and sponsored by the Minneapolis Public Schools and the College of Education. Problems in curriculum development at the elementary and secondary levels with group and individual projects planned to meet the needs, interests, and specializations of the registrants. Open to selected Minneapolis teachers and a limited number of students from outside Minneapolis. Consultants available for problems in child development, elementary and secondary curriculum, intercultural education, and various subject fields for elementary and secondary schools. Admission by consent of the director, Mr. Robert Gilchrist, assistant superintendent, Minneapolis Public Schools, and the College of Education Workshop Committee. Students may register for 3 to 9 credits or may be listed for 3 hours as auditors. The entire workshop group will be scheduled for the first four weeks with a maximum of 6 credits, and those who wish to complete 9 credits will continue working with the staff for the following two weeks. (3 to 9 cred.; 9:00 to 4:00 June 14 to July 9 and hrs. ar. July 12 to 23; Marshall High School.) Mr. Gilchrist, Miss Cutright, Mr. Goslin, Mr. Cary, visiting lecturers and consultants
- Ed.C.I.172.‡§ Workshop in Curriculum Problems—Experimental Schools. Specially planned for elementary and secondary teachers in the experimental curriculum study under the College of Education. Group and individual projects for curriculum development at the elementary and secondary levels. Admission by consent of the director. (6 to 9 cred.; 9:00 to 4:00 MTWThF; ar.) Mr. Bossing, Mr. Grim, Mr. McLaughlin, Miss Odom, Mr. Pinckney, and consultants
- Ed.C.I.271.*‡ Problems in Curriculum Construction. (Cred. ar.; prereq. cred. or current enrolment in Ed.C.I. 113, 119, 170, or equiv., and consent of instructor; ar.) Mr. Bossing, Mr. Cook, Mr. Gilchrist
- Ed.C.I.273.*‡ Problems in Reading. (Cred. ar.; prereq. consent of instructor; V WTh; 221Bu.) Mr. Bond

Elementary Education

- Ed.C.I.63.‡ Children's Literature. (3 cred.; prereq. Ed. 71A-B or teaching experience; jr., sr.; VI MTWThF; 209UHS.) Miss Frogner
- Ed.C.I.102.‡ Teaching the Social Studies in the Elementary School. (3 cred.; prereq. Ed. 71A-B-C or equiv.; IV MTWThF; 14TNM.) Miss Hawkinson
- Ed.C.I.103.‡ Teaching of Science in the Elementary School. Emphasis on resources and materials, and their application in elementary grades. (3 cred.; sr., grad.; prereq. Ed. 71A-B or teaching experience; III MTWThF; 9TNM.) Mr. Noll
- Ed.C.I.119.‡ Elementary School Curriculum. (3 cred.; sr., grad.; prereq. Ed. 71C or equiv.; I MTWThF; 206Pt.) Mr. Archer
- Ed.C.I.130.‡ Problems in Childhood Education. (See Child Welfare 150.) (3 cred.; sr., grad.; prereq. 12 cred. in ed.; IV MTWThF; 200Pt.) Mrs. Fuller
- Ed.C.I.143.‡ Teaching and Supervision of Reading in the Elementary School. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 71A or equiv.; II MTWThF; 206Pt.) Mr. Bond
- Ed.C.I.149.‡ The Teaching and Supervision of Arithmetic in the Elementary School. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 51A or 71A; I MTWThF; 14TNM.) Mr. Harry Johnson

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

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

- Ed.C.I.150.‡ Supervision and Improvement of Instruction. (3 cred.; sr., grad.; prereq. Ed. 71C or equiv.; III MTWThF; 200Pt.) Mr. Harry Johnson
- Ed.C.I.153.‡ Supervision and Teaching of English in the Elementary Schools. (3 cred.; sr., grad.; prereq. Ed. 71A-B-C or equiv.; IV MTWThF; 9TNM.) Miss Frogner
- 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 TTh, 200Pt.) Mr. Staudenmaier
- Ed.C.I.263.*‡ Research in Arithmetic Instruction. (3 cred.; prereq. Ed.C.I. 148 or 149 or equiv. and consent of instructor; ar.) Mr. Harry Johnson

Secondary Education

- Ed.C.I.113.‡ High School Curriculum. (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51A-B-C or equiv.; VII MTWThF; 202Pt.) Miss Birkmaier
- Ed.C.I.122.‡ Literature for Adolescents. (3 cred.; jr., sr., grad.; prereq. Ed. 51C or junior-senior high school teaching experience; I MTWThF; 112Bu.) Miss Dora V. Smith
- Ed.C.I.131.‡ Advanced Course in Teaching Technical Business Subjects in Secondary Schools. (3 cred.; sr., grad.; I MTWThF; 213TNUH.) Mr. Price
- Ed.C.I.133.‡ Consumer Education in the Secondary Schools. (3 cred.; sr., grad.; III MTWThF; 213TNUH.) Mr. Price
- Ed.C.I.136.‡ Organization and Supervision of Distributive Education Programs. (3 cred.; sr., grad.; I MTWThF; 8TNM.) Mr. Beaumont
- Ed.C.I.137.‡ Materials and Methods in Distributive Education Programs. (3 cred.; sr., grad.; II MTWThF; 213TNUH.) Mr. Meyer
- Ed.C.I.138.‡ Supervisory Training in Distributive Education. (3 cred.; sr., grad.; three weeks June 14 to July 3, VII-VIII MTWThF; 206UHS.) Mr. Fairbrother
- Ed.C.I.139.‡ Coordination Techniques in Business Education. (3 cred.; sr., grad.; IV MTWThF; 202TNUH.) Mr. Meyer
- Ed.C.I.140.‡ Teaching of Speech. (Also listed as Speech 151.) Orientation in problems of speech education. Review of studies of teaching methods and special devices, voice recordings, tests. Direction of extra-curricular activities. (3 cred.; jr., sr., grad.; prereq. Speech 1-2-3 or Speech 5-6 or equiv. or permission of instructor; III MTWThF; 316F.) Mr. Gilkinson
- Ed.C.I.142.‡ Evening Distributive Education Classes. (3 cred.; sr., grad.; III MTWThF; 8TNM.) Mr. Latterell
- Ed.C.I.144.‡ Teaching of Reading in Junior and Senior High Schools. (3 cred.; sr., grad.; prereq. 9 hrs. in ed. including Ed. 51A; III MTWThF; 15TNM.) Mr. Tinker
- Ed.C.I.204.‡ Social Studies Curriculum. (3 cred.; grad.; II MTWThF; 15TNM.) Miss Hawkinson
- Ed.C.I.225.*‡ Special Problems in Supervision of Instruction in Secondary Schools. (Cred. ar.; grad.; ar.) Mr. Boardman
- Ed.C.I.238.*‡ Problems in Distributive Education. (3, 6, or 9 cred.; grad.; ar.) Mr. Meyer
- Ed.C.I.239.*‡ Problems in Business Education. (Cred. ar.; grad.; ar.) Mr. Price
- Ed.C.I.266.‡ Supervision of High School Instruction. (3 cred.; grad.; II MTWThF; 103TSF.) Mr. Boardman

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

- Ed.C.I.287.‡ Advanced Course in the Teaching of Science. (3 cred.; sr., grad.; prereq. Ed. 51C; IV MTWThF; 8TNM.) Mr. Noll
- Ed.C.I.294.*‡ Advanced Course in Methods of Teaching English. (3 cred.; grad.; II MTWThF; 112Bu.) Miss Dora V. Smith
- Ed.C.I.296.*‡ Special Problems in Teaching English. (Cred. ar.; grad.; ar.) Miss Dora V. Smith

Higher Education

- Ed.C.I.228.*‡§ Workshop: Problems of Higher Education and Teacher Training. (6 cred.; grad.; June 14 to July 9, ar. MTWThF; Center for Continuation Study.) Mr. Cooper, Mr. Keller, Mr. Furrow, and consultants
- Ed.C.I.250.‡ Higher Education in the United States. (3 cred.; grad.; prereq. 18 hrs. in ed. or consent of instructor; I MTWThF; 15TNM.) Miss Eckert
- Ed.C.I.252.‡ Effective College Teaching. (3 cred.; grad.; prereq. 18 hrs. in ed. or consent of instructor; II MTWThF; 8TNM.) Mr. Oppenheimer
- Ed.C.I.285.‡ Professional Education of Teachers. (3 cred.; prereq. 15 hrs. in ed.; VII MTWThF; 221Bu.) Mr. G. Lester Anderson

SECOND TERM

General Courses

- Ed.C.I.105.‡ Visual Aids in Teaching. (3 cred.; jr., sr., grad.; VII MTWThF; 101WeH.) Mr. Wendt
- Ed.C.I.106.‡ Coordinating of Visual Education Programs. (3 cred.; jr., sr., grad.; VI MTWThF; 101WeH.) Mr. Wendt
- Ed.C.I.107.‡ Radio in Education. (3 cred.; jr., sr., grad.; III MTWThF; 302MurH.) Mr. Tyler
- Ed.C.I.114.‡ The School Health Education Program. (3 cred.; sr., grad.; prereq. Ed.T. 83, P.H. 50 or equiv.; IV MTWThF; 110UHS.) Miss Starr
- Ed.C.I.117.‡ Rural Education for Administrators and Teachers. (3 cred.; sr., grad.; prereq. consult instructor; II MTWThF; 303-304HE[UF].) Mr. Archer
- Ed.C.I.145.‡ Remedial Reading. (3 cred.; prereq. Ed.C.I. 143 or 144 or 159; IV MTWThF; 221Bu.) Mr. Bond
- Ed.C.I.174-175-176.‡ Clinical Methods in Practice in Speech Pathology. (3 cred.; sr., grad.; prereq. Sp. 1, 2, 3, 61, 67, 162, and Ed.Psy. 142; consult instructor; hrs. ar.) Mr. Bryngelson
- Ed.C.I.205.*‡ Problems in Visual Education. (Cred. ar.; ar.) Mr. Wendt
- Ed.C.I.207.*‡ Problems in Radio Education. (1 to 3 cred.; ar.) Mr. Tyler
- Ed.C.I.271.*‡ Problems in Curriculum Construction. (Cred. ar.; prereq. completion or current enrolment in one of the following: Ed.C.I. 113, 119, 170, or consent of instructor; ar.) Mr. Cook, Mr. McLaughlin
- Ed.C.I.273.*‡ Problems in Reading. (Cred. ar.; prereq. consent of instructor; ar.) Mr. Bond

Elementary Education

- Ed.C.I.59.‡ Speech in the Elementary Grades. Discussion of the development of good speech habits for elementary school children and the identification and handling of speech difficulties in the elementary schoolroom. (3 cred.; jr., sr.; prereq. Ed. 71A-B or teaching experience, and course in fundamentals of speech recommended; II MTWThF; 107UHS.) Mrs. Chapman

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

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

- Ed.C.I.102.‡ The Teaching of the Social Studies in the Elementary Grades. (3 cred.; prereq. Ed. 71A-B-C or equiv; II MTWThF; 110UHS.) Miss Layman
- Ed.C.I.103.‡ Teaching of Science in the Elementary School. (3 cred.; sr., grad.; prereq. Ed. 71A-B or teaching experience; VI MTWThF; 111Bu.) Mr. Kenneth Anderson
- Ed.C.I.119.‡ Elementary School Curriculum. (3 cred.; sr., grad.; prereq. Ed. 61C or equiv.; III MTWThF; 210UHS.) Mr. Harry Johnson
- Ed.C.I.143.‡ Teaching and Supervision of Reading in the Elementary School. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 71A or equiv.; II MTWThF; 209UHS.) Mr. Bond
- Ed.C.I.150.‡ Supervision and Improvement of Instruction. (3 cred.; sr., grad.; prereq. Ed 71C or equiv; IV MTWThF; 107UHS.) Mr. Harry Johnson
- Ed.C.I.187.‡§ Workshop in Rural and Village School Problems. Students in the workshop must also be registered for Ed.C.I. 117, Rural Education for Administrators and Teachers, 3 credits, which will be used as a core course in connection with the workshop. Special group and individual projects in the workshop will supplement the core course, emphasizing the problems of the registrants and the improvement of rural teaching. Limited to thirty students. (6 cred.; prereq. permission of the dean of the College of Education; not open to those who have received credit in Ed.C.I. 187 or 188 in previous sessions; 10:00 to 4:00 MTWThF; 303-304HE[UF].) Mr. Archer, Miss Franseth

Secondary Education

- Ed.C.I.113.‡ High School Curriculum. (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed 51A-B-C or equiv; III MTWThF; 107UHS.) Mr. McLaughlin
- Ed.C.I.132.‡ Teaching Basic Business Subjects in Secondary Schools. (3 cred.; sr., grad.; IV MTWThF; 213TNUH.) Mr. Price
- Ed.C.I.133.‡ Consumer Education in the Secondary Schools. (3 cred.; sr., grad.; II MTWThF; 213TNUH.) Mr. Price
- Ed.C.I.139.‡ Coordination Techniques in Business Education. (3 cred.; sr., grad.; I MTWThF; 213TNUH.) Mr. Meyer
- Ed.C.I.141.‡ Cooperative Part-Time Distributive Education Classes. (3 cred.; sr., grad.; III MTWThF; 213TNUH.) Mr Meyer
- Ed.C.I.168.‡ Current Developments in the Social Studies. (3 cred.; IV MTWThF; 202TNUH.) Miss Layman
- Ed.C.I.169.‡ Extra-Curricular Activities. (3 cred.; prereq. 10 hrs. in ed. including Ed. 51A; II MTWThF; 112Bu.) Mr. McLaughlin
- Ed.C.I.238.*‡ Problems in Distributive Education. (3 cred.; grad.; prereq. consent of instructor; ar.) Mr. Meyer
- Ed.C.I.239.*‡ Problems in Business Education. (Cred. ar.; grad.; ar.) Mr. Price
- Ed.C.I.266.‡ Supervision of High School Instruction. (3 cred.; grad.; IV MTWThF; 111Bu.) Mr. Keller

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., grad.; prereq. 10 hrs. in ed.; I MTWThF; 111NH.) Mr. Oppenheimer

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

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

- Ed.Ad.210.* *Financial Aspects of School Business Administration.* Financial program planning, budgeting, accounting, cost finding, income and expenditure control, and the preparation and analysis of financial reports. (3 cred.; grad.; prereq. Ed.Ad. 124 and 125 or 225; II MTWThF; 4TNM.) Mr. Domian
- 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.; grad.; prereq. 15 hrs. in ed. including Ed.Ad. 124; III MTWThF; 115TNM.) Mr. Cramer
- Ed.Ad.226. *School Plant Planning and Management.* Plant program planning and financing, including operation and maintenance of public school buildings. (3 cred.; grad.; prereq. Ed.Ad. 124 and 125 or 225; I MTWThF; 4TNM.) Mr. Neale
- Ed.Ad.227. *Teacher and Employee Administration.* Employment practices, salary schedules, personnel records and reports, welfare procedures, improvement in service and legal aspects of instructional and non-instructional school employee administration. (3 cred.; grad.; prereq. 15 hrs. in ed. including Ed.Ad. 124; IV MTWThF; 19TNM.) Mr. Domian
- Ed.Ad.228.* *Special Problems in Educational Administration.* For the summer of 1948 this course will deal with recent research in the field of school administration. Superintendents may work on research problems in connection with their own school systems. (1 to 6 cred.; grad.; prereq. Ed.Ad. 124, 125; II Th; 9TNM.) Mr. Neale
- Ed.Ad.235. *Seminar in Educational Administration.* Required of all candidates for Master's degrees under Plan A and of all candidates for Ph.D. degrees. (No cred.; prereq. consent of instructor; time and place ar.) Mr. 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.; jr., sr., grad.; prereq. 10 hrs. in ed.; I MTWThF; 107TSF.) Mr. Cramer

Secondary Education

- Ed.Ad.133. *Guidance in Secondary Schools.* (Also listed as Ed.Psy. 133.) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; III MTWThF; 206Pt.) Mr. Dugan
- Ed.Ad.167. *Junior High School.* (Not offered.) Elementary education majors who need this course for junior high school endorsement should substitute Ed. 51C. (See p. 108.)
- Ed.Ad.218. *Recent Literature in Secondary Education.* (No cred.; seminar for grad. students; VI W; 18TNM.) Mr. Boardman
- Ed.Ad.263. *The Organization of the Secondary School.* (3 cred.; grad.; I MTWThF; 19TNM.) Mr. Robert Keller
- Ed.Ad.264. *The Administration of the Instructional Activities of the Secondary School.* (3 cred.; grad.; IV MTWThF; 115TNM.) Mr. Stout
- Ed.Ad.270.* *Special Problems in Secondary Education.* (Cred. ar.; prereq. consent of instructor; VI W; 18TNM.) Mr. Boardman

Higher Education

- Ed.Ad.274. *The Junior College.* Organization and control, faculty and employee personnel administration, problems of curriculum and instruction. (3 cred.; grad.; III MTWThF; 18TNM.) Miss Eckert

SECOND TERM

General Courses

- Ed.Ad.124. Public School Administration. (3 cred.; sr., grad.; prereq. 10 hrs. in ed.; I MTWThF; 200 Pt.) Mr. Neale
- Ed.Ad.210.* Financial Aspects of School Business Administration. (3 cred.; grad.; prereq. Ed.Ad. 124 and 125 or 225; I MTWThF; 107UHS.) Mr. Domian
- Ed.Ad.225. Pupil Personnel Administration. (3 cred.; grad.; prereq. 15 hrs. in ed. including Ed.Ad. 124; III MTWThF; 206UHS.) Mr. Cramer
- Ed.Ad.226. School Plant Planning and Management. (3 cred.; grad.; prereq. Ed.Ad. 124 and 125 or 225; III MTWThF; 110UHS.) Mr. Domian
- Ed.Ad.227. Teacher and Employee Administration. (3 cred.; grad.; prereq. 15 hrs. in ed. including Ed.Ad. 124; III MTWThF; 106UHS.) Mr. Farley
- Ed.Ad.228.* Special Problems in Educational Administration. (1 to 6 cred.; grad.; prereq. Ed.Ad. 124, 125, 127; II Th; 9TNM.) Mr. Neale
- Ed.Ad.230.* Public Relations for Schools. (3 cred.; grad.; IV MTWThF; 209UHS.) Mr. Farley
- Ed.Ad.235. Seminar in Educational Administration. Required of all candidates for Master's degrees under Plan A and for all Ph.D. degree candidates with a major in general school administration. (No cred.; prereq. consent of instructor; time and place ar.) Mr. Neale

Elementary Education

- Ed.Ad.115. Organization of the Elementary School. (3 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.; I MTWThF; 209UHS.) Mr. Cramer

Secondary Education

- Ed.Ad.133. Guidance in Secondary Schools. (Also listed as Ed.Psy. 133.) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; I MTWThF; 109UHS.) Mr. Dugan
- Ed.Ad.167. Junior High School. (Not offered.) Elementary education majors who need this course for junior high school endorsement should substitute Ed. 51C. (See page 108.)
- Ed.Ad.264. The Administration of the Instructional Activities of the Secondary School. (3 cred.; grad.; II MTWThF; 206UHS.) Mr. Umstatted
- Ed.Ad.265. The Administration of the Non-instructional Activities of the Secondary School. (3 cred.; grad.; I MTWThF; 110UHS.) Mr. Umstatted
- Ed.Ad.270.* Special Problems in Secondary Education. (Cred. ar.; prereq. consent of instructor; ar.) Mr. Umstatted

EDUCATIONAL PSYCHOLOGY

FIRST TERM

General Courses

- Ed.Psy.60. Introduction to Statistical Methods. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; II MTWThF; 19TNM.) Mr. Van Wagenen
- Ed.Psy.120. Basic Principles of Measurement. (3 cred.; sr., grad.; prereq. Ed.Psy. 60 or equiv.; II MTWThF; 201WeH.) Mr. Cook
- Ed.Psy.140. Instruments and Techniques of Measurement. (3 cred.; sr., grad.; prereq. 120 or equiv.; IV MTWThF; 213TNUH.) Mr. Feder
- Ed.Psy.150. Psycho-educational Clinic. (3 to 6 cred.; sr., grad.; prereq. Ed.Psy. 120, 140 and 141 or 142 and consent of instructor; ar.) Mr. Bond, Mr. Tinker

- Ed.Psy.159. Personality Adjustments in Education. (3 cred.; sr., grad.; prereq. 9 hrs. in ed. and psy. including one recent course in psy.; I MTWThF; 107TNM.) Mr. Walter Johnson
- Ed.Psy.208.* Methods in Educational Research. (3 cred.; grad.; II MTWThF; 5F.) Mr. Palmer O. Johnson
- Ed.Psy.216. Statistical Methods in Education. (3 cred.; grad.; I MTWThF; 5F.) Mr. Palmer O. Johnson
- Ed.Psy.225.* Diagnosis and Counseling in a Student Personnel Program. (3 cred.; grad.; prereq. Ed.Psy. 133 and 140 or consent of instructor; II MTWThF; 115TNM.) Mr. Feder
- Ed.Psy.233.* Problems in Guidance and Personnel Work. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. Dugan, Mr. Feder
- Ed.Psy.253.* Research Problems. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. G. Lester Anderson, Mr. Cook, Mr. Palmer O. Johnson, Mr. Van Wagenen
- Ed.Psy.281. Practice in Personnel Work: Guidance Clinic, Student Counseling Bureau Section. (3 cred.; grad.; limited enrolment, admission by consent of instructor only; ar.; 101EdH.) Miss Hagenah
- Ed.Psy.293.* Psychology of Learning. (3 cred.; grad.; prereq. 12 cred. in psy. and ed.psy.; VI MTWThF; 221Bu.) Mr. G. Lester Anderson

Elementary Education

- Ed.Psy.114. Psychology of Elementary School Subjects. (3 cred.; jr., sr., grad.; prereq. 10 cred. in psy. and ed.; III MTWThF; 107TNM.) Mr. Van Wagenen

Secondary Education

- Ed.Psy.133. Guidance in Secondary Schools. (3 cred.; sr., grad.; prereq. 9 cred. in ed.; III MTWThF; 206Pt.) Mr. Dugan
- Ed.Psy.281. Practice in Personnel Work. For graduate students interested in personnel work in secondary schools. (3 cred.; prereq. consent of instructor; individual assignments ar.) Mr. Dugan

SECOND TERM

General Courses

- Ed.Psy.60. Introduction to Statistical Methods. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; II MTWThF; 5F.) Mr. Palmer O. Johnson
- Ed.Psy.120. Basic Principles of Measurement. (3 cred.; sr., grad.; prereq. Ed.Psy. 60 or equiv.; II MTWThF; 111Bu.) Mr. Cook
- Ed.Psy.159. Personality Adjustments in Education. (3 cred.; sr., grad.; prereq. 9 hrs. in ed. and psy. including one recent course in psy.; IV MTWThF; 210UHS.) Mr. Bordin
- Ed.Psy.217. Statistical Methods in Education. (3 cred.; grad.; I MTWThF; 5F.) Mr. Palmer O. Johnson
- Ed.Psy.226.* Diagnosis and Counseling in a Student Personnel Program. (3 cred.; grad.; prereq. Ed.Psy. 133, 140, and 225 or consent of instructor; II MTWThF; 106UHS.) Mr. Bordin
- Ed.Psy.233.* Problems in Guidance and Personnel Work (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. Dugan, Mr. Bordin

- Ed.Psy.253.* Research Problems. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. G. Lester Anderson, Mr. Cook, Mr. Palmer O. Johnson, Mr. Van Wagenen
- Ed.Psy.293.* Psychology of Learning. (3 cred.; grad.; prereq. 12 cred. in psy. and ed.psy.; VII MTWThF; 111Bu.) Mr. G. Lester Anderson
- Ed.Psy.294.* Recent Theory and Research in Human Learning. (3 cred.; grad.; consult instructor; VI MTWThF; 221Bu.) Mr. G. Lester Anderson

Elementary Education

- Ed.Psy.183. Education of Gifted Children. (3 cred.; jr., sr., grad; prereq. Ed. 51A or equiv.; II MTWThF; 109UHS.) Mr. Van Wagenen

Secondary Education

- Ed.Psy.133. Guidance in Secondary Schools. (Also listed as Ed.Ad. 133.) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; I MTWThF; 109UHS.) Mr. Dugan
- Ed.Psy.158. Psychology of Adolescence. (3 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.; VI MTWThF; 109UHS.) Mr. Nickerson
- Ed.Psy.281. Practice in Personnel Work. (3 cred.; prereq. consent of instructor; individual assignments ar.) Mr. Dugan

HISTORY AND PHILOSOPHY OF EDUCATION

FIRST TERM

General Courses

- H.Ed.140. Philosophies of Modern Education. (3 cred.; sr., grad.; no prereq.; I MTWThF; 115Psy.) Mr. Beck
- H.Ed.155. History of Public Education in the United States. Emphasis on the development of elementary and secondary education in the nineteenth century; special movements; rise of state school systems. (3 cred.; jr., sr., grad.; III MTWThF; 109Psy.) Miss Alexander
- H.Ed.180. The School and the Social Order. (3 cred.; jr., sr., grad.; prereq. 6 hrs. in psy.; IV MTWThF; 101WeH.) Mr. Beck
- H.Ed.241.* Problems in the History and Philosophy of Education. (Cred. ar.; prereq. permission of instructor; ar.) Mr. Beck, Miss Alexander

SECOND TERM

General Courses

- H.Ed.131. Comparative Education. (3 cred.; sr., grad.; III MTWThF; 209UHS.) Mr. Beck
- H.Ed.180. The School and the Social Order. (3 cred.; jr., sr., grad.; prereq. 6 hrs. in psy.; I MTWThF; 210UHS) Mr. Beck
- H.Ed.241.* Problems in the History and Philosophy of Education. (Cred. ar.; prereq. permission of instructor; ar.) Mr. Beck

HOME ECONOMICS EDUCATION

FIRST TERM

- H.E.Ed.191. Advanced Course in the Teaching of Home Economics. A study of materials, equipment, and teaching procedures based on newer concepts of learning and changing social and economic needs of families. This course offers the experienced teacher

an opportunity to study problems related to her own situation at the secondary or higher educational level. (3 cred.; sr., grad.; prereq. H.E.Ed. 91, 93, or consent of instructor; IV MTWThF and 1 hr. ar.; 114HE[UF].) Miss Rose

H.E.Ed.194A. Adult Education in Home Economics. An analysis and study of the problems affecting community and family living; methods and techniques used in helping men and women and out-of-school youth meet present situations. Course is planned for teachers and supervisors of adult classes and extension teachers. (3 cred.; sr., grad.; prereq. H.E.Ed. 91, 93, or parallel; II MTWThF and 1 hr. ar.; 213HE[UF].) Mrs. Wood

INDUSTRIAL EDUCATION

FIRST TERM

Ind.6.‡ Applied General Drawing. (30 limit, preference to Ind. Ed. majors.) (3 cred.; prereq. Ind. 5 or consent of instructor; ; I-II MTWThF; 201TNUH.) Mr. Siro

Ind.10.‡ Basic Electricity. (24 limit, preference to Ind. Ed. majors.) (3 cred.; no prereq.; III-IV MTWThF; 15TNUH.) Mr. Kavanaugh

Ind.15.‡ Basic Graphic Arts. (24 limit, preference to Ind. Ed. majors.) (3 cred.; no prereq.; VI-VII MTWThF; 14TNUH.) Mr. Nelson

Ind.20.‡ Basic Handicrafts. (24 limit, preference to Ind. Ed. majors.) (3 cred.; no prereq.; III-IV MTWThF; 6Pt.) Mr. Nelson

Ind.50ABC.‡‡ Directed Teaching. (6 limit, selected by instructor; 2 cred. any letter; 6 cred. required; prereq. Ind. 70 and 80 with C+ average in manipulative and professional Industrial Education courses; hours arranged for individuals.) Mr. Nelson

Ind.105. Administration of Industrial Education. (3 cred.; jr., sr., grad.; not a part of the four-year curriculum; II MTWThF; 202TNUH.) Mr. Smith

Ind.107. Coordination. (3 cred.; jr., sr., grad.; prereq. Ind. 60-61 or 105 or 125 or consent of instructor; not a part of the four-year curriculum; I MTWThF; 202TNUH.) Mr. Widdowson

Ind.125. Philosophy and Practice of Vocational Education. (3 cred.; jr., sr., grad.; may be substituted for Ind. 60-61 in the four-year curriculum; III MTWThF; 202TNUH.) Mr. Widdowson.

Ind.200.* Research Problems. (3, 6, or 9 cred.; grad.; individual conferences about independent papers under Plan B for the MA. degree and Plan Y for the M. Ed. degree; conference hours III MTWThF and by appointment; 101TNUH.) Mr. Smith

Dunwoody—Shopwork and Drawing. Arranged by Mr. Smith.

SECOND TERM

Ind.7.‡ Building Construction Drawing. (30 limit, preference to Ind. Ed. majors.) (3 cred.; prereq. Ind. 5-6 or consent of instructor; III-IV MTWThF; 201TNUH.) Mr. Siro

Ind.12.‡ Electricity and Radio. (24 limit, preference to Ind. Ed. majors.) (3 cred.; prereq. Ind. 10 or consent of instructor; VI-VII MTWThF; 15TNUH.) Mr. Kavanaugh

Ind.66. Related Subjects. (3 cred.; prereq. Ind. 40-42 or consent of instructor; I MTWThF; 202TNUH.) Mr. Williams

Ind.115. Supervision of Industrial Education. (3 cred.; jr., sr., grad.; prereq. Ind. 60-61 or 105 or 125 or consent of instructor; not a part of the four-year curriculum; III MTWThF; 202TNUH.) Mr. Williams

† Students registering for this course must make out the application required for methods courses and directed teaching. Forms are available in the office of the director of student teaching, 206E Burton Hall.

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

Ind.135. Industrial Course Construction. (3 cred.; jr., sr., grad.; may be substituted for Ind. 40-42 in the four-year curriculum; II MTWThF; 202TNUH.) Mr. Micheels
 Ind.200.* (See first term—105TNUH.) Mr. Micheels
 Dunwoody—Shopwork and Drawing. Arranged by Mr. Micheels.

Shop and Drawing—Both Terms

In selecting shop and drawing courses, in addition to those listed above, students should refer to other parts of this bulletin, as follows: Agricultural Engineering (Courses 40-41-42 required in four-year curriculum), Architecture, Art, Art Education, Drawing and Descriptive Geometry, Mechanical Engineering, and other divisions of the Institute of Technology. First degree candidates should keep in mind the maximum of 45 credits in shopwork and drawing combined. More credits may be earned and recorded, but will not be counted toward the B.S. degree. Advanced students may earn such credits also, but without possibility of their use in graduate programs.

Notes

Available upon request to Department of Industrial Education, Room 103 Temporary West of Pattee Hall—a copy of the four-year curriculum and a statement concerning the four patterns (A-B-X-Y) for the Master's degrees, M.A. and M.Ed. Persons interested in the Ph.D. degree are invited to open correspondence or consultation about their backgrounds and professional intentions.

The University of Minnesota is designated by the Minnesota State Board for Vocational Education for the offering of courses leading to certification for positions aided under the Smith-Hughes, George-Barden, and allied acts and regulations.

METHODS AND DIRECTED TEACHING

FIRST TERM

Nursing Education

Ed.T.51A.†† Special Methods of Directed Teaching in Schools of Nursing. (2 cred.; sr., grad.; prereq. Ed. 51A; prereq. or parallel 51B and Nu.Ed. 69; open only to students who will also be registered for 2 cred. in this course in the second term; see instructor; VII MWF; 113MeS.) Miss Harrington

Elementary Education

Ed.T.56.‡ Methods and Observation in the Nursery School and Kindergarten. (5 cred.; jr.; prereq. Psy. 1-2; IV W and observation hrs. ar.; 204E Pt.) Miss Headley, Miss Peterson

Ed.T.57.‡ Nursery School-Kindergarten Laboratory in Art, Literature, and Social Studies. (5 cred.; jr.; prereq. Ed.T. 55, 56; IV MTThF and observation hrs. ar.; 204E Pt.) Miss Headley

Ed.T.54A,B, or C.†† Directed Teaching in the Elementary School. (Cred. ar.; limited to five students, registration approved only in special cases, consent of instructor required; ar. at Tuttle School.) Mr. Staudenmaier

Secondary Education

Ed.T.52.†† Practice Teaching. Open to students who wish to register for a limited number of credits in practice teaching to qualify for the secondary school certificate through the College of Education. (Cred. ar.; prereq. consent of instructor; ar. in University High School.) Mr. Grim

† Students registering for this course must make out the application required for methods courses and directed teaching. Forms are available in the office of the director of student teaching, 206E Burton Hall.

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

- Ed.T.66Am.‡‡ The Teaching of Composition in Secondary Schools. (2 cred.; sr., VI MTWTh; 109UHS.) Miss Nygaard
- Ed.T.66Bm.‡‡ The Teaching of Literature in Secondary Schools. (2 cred.; sr.; VII MTWTh; 109UHS.) Miss Nygaard
- Ed.T.67Am,Bm.‡‡ The Teaching of Secondary School Mathematics. (4 cred.; sr.; VI-VII MTWTh; 110UHS.) Mr. Donovan Johnson
- Ed.T.68Am,Bm.‡‡ Methods of Teaching Secondary School Science. (3 cred.; sr.; VI MTWThF; 111Bu.) Mr. Kenneth Anderson
- Ed.T.69Am,Bm.‡‡ Methods of Teaching History and Social Studies. (4 cred.; sr.; VI-VII MTWTh; 107UHS.) Mr. McLendon

SECOND TERM

Nursing Education

- Ed.T.51A.‡‡ Special Methods of Directed Teaching in Schools of Nursing. (2 cred.; sr., grad.; prereq. Ed. 51A; prereq. or parallel 51B and Nu.Ed. 69; open only to students who have taken 2 cred. in this course during the first term; see instructor; VII MWF; 113MeS.) Miss Harrington

MUSIC EDUCATION

FIRST TERM

- Mu.Ed.50A.‡ Primary Methods. (2 cred.; jr.; no prereq.; IV MTWF; 4Mu.) Mr. Winslow
- Mu.Ed.60‡-61-62.‡ Supervision and Teaching. (3 cred.; sr.; prereq. Mu.Ed. 51A,B,C and Mu.Ed. 50A, B, Mu.Ed. 53, and a C plus average in the major; VII, VIII W, 12 hrs. ar.; 4Mu.) Mr. Winslow
- Mu.Ed.64.‡ Band Organization. (3 cred.; sr.; prereq. Mu.Ed. 4, 5, 6; IV MTWThF; 1 hr. ar.; 4NMA.) Mr. Prescott
- Mu.Ed.68. Conducting of Instrumental Music and Survey of Materials. (3 cred.; sr.; prereq. Mu.Ed. 65; V MTWThF; 4Mu.) Mr. Ivory
- Mu.Ed.105E. Advanced Topics in Instrumental Music Education. (3 cred.; prereq. consent of instructor; IV MTWThF; 104Mu.) Mr. Ivory
- Mu.Ed.110E.‡ General Music Education Workshop. (3 cred.; sr., grad.; prereq. 9 credits in mu. ed. or consent of instructor; II MTWThF, 1 hr. ar.; 4Mu.) Mr. Winslow, Mr. Nickerson, Mr. Ivory and guest lecturers
- Mu.Ed.112E.‡ Band Workshop. (3 cred.; sr., grad.; prereq. 9 credits in mu. ed. or consent of instructor; I MTWThF, 1 hr. ar.; 4NMA.) Mr. Prescott and others
- Mu.Ed.224E. Seminar and Individual Research Problems in Music Education. (2-6 cred.; grad.; prereq. consent of instructor; III MTWThF; 104Mu.) Mr. Winslow

SECOND TERM

- Mu.Ed.50A.‡ Primary Methods. (2 cred.; jr.; no prereq.; II MTWTh; 4Mu.) Mr. Winslow
- Mu.Ed.50B.‡ Intermediate Methods. (2 cred.; prereq. Mu.Ed. 50 or equiv.; III MTWTh; 4Mu.) Mr. Winslow
- Mu.Ed.65.‡ Instrumentation. (3 cred.; jr.; prereq. Mu. 6T; II MTWThF and 1 hr. ar.; 104Mu.) Mr. Ivory
- Mu.Ed.224E. Seminar and Individual Research Problems in Music Education. 2-6 cred.; prereq. consent of instructor; IV MTWTh; 104Mu.) Mr. Winslow

† Students registering for this course must make out the application required for methods courses and directed teaching. Forms are available in the office of the director of student teaching, 206E Burton Hall.

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

PHYSICAL EDUCATION AND ATHLETICS

PHYSICAL EDUCATION FOR MEN

Courses Physical Education 1A, B and 2A, B count toward the Physical Education requirement in those colleges having such requirement and are elective for students in other colleges.

Other courses numbered under 100 may be used to qualify for a major or minor in physical education or for the State Department of Education 9 quarter endorsement for teaching part time in this field. Courses numbered above 100 apply toward the M.Ed., M.A., and Ph.D. degrees with the exception of Phys.Ed. 116E which may be applied only towards the M.Ed. The Department of Physical Education for Women also offers graduate courses which are open to men.

FIRST TERM

- 1A. Beginning Swimming. (1 cred.; no prereq.; VI MTWThF; Rec. Pool, CH.) Mr. Boyce
- 2A. Beginning Golf. (Limited to 30.) (1 cred.; no prereq.; V-VI MWF; Golf Course.) Mr. Bolstad
- 2A. Intermediate Golf. (Limited to 30.) (1 cred.; prereq. score of 100; V-VI TTh and 2 hrs. ar.; Golf Course.) Mr. Bolstad
- 2A. Beginning and Intermediate Tennis. (1 cred.; no prereq.; VI MTWThF; 4th Street Tennis Courts.) Mr. Piper
- 2A. Advanced Swimming. (1 cred.; prereq. ability to swim 50 yards; VIII MTWThF; Varsity Pool, CH.) Mr. Boyce
- 4C,B,A. Fundamentals of Track, Basketball, Football. (1 cred. each; no prereq.; 7:30 to 9:00 a.m. MTWThF; CH and Northrop Field.) Mr. Kelly, Mr. MacMillan, Mr. Roning
- 5A. Touchball, Six-Man Football, Conditioning. (1 cred.; no prereq.; V MTWThF; CH.) Mr. Shawbold
- 5B. Gymnastic Apparatus and Tumbling. (1 cred.; no prereq.; IV MTWThF; CH.) Mr. Shawbold
- 6A. Soccer, Speedball, Volleyball. (1 cred.; no prereq.; III MTWThF; CH.) Mr. Shawbold
- 6C. Aquatics. (1 cred.; prereq. ability to swim 100 yards; VII MTWThF; CH.) Mr. Boyce
- 7A. Active and Social Games, Relays. (1 cred.; no prereq.; VI MTWThF; CH.) Mr. Bartelma
- 7B. Boxing and Wrestling. (1 cred.; no prereq.; VIII MTWThF; CH.) Mr. Bartelma
- 9B. Ballroom and American Country Dancing. (1 cred.; no prereq.; VIII MTWTh, IX TTh; CH.) Mr. Piper
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.; soph.; no prereq.; II MTWThF; CH.) Mr. Osell
- 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.; jr.; prereq. 6 cred. in activity courses or equiv.; VII MTWThF; 215CH.) Mr. Bartelma
56. Introduction to Community Recreation. The theory and philosophy of play and recreation. (3 cred.; jr.; no prereq.; IV MTWThF; 205CH. Mr. Rickman

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

60. Athletic Training and Treatment of Injuries. Policies for conditioning of athletes in interscholastic and intercollegiate sports, safety controls, care and prevention of injuries in physical education. (3 cred.; jr., sr.; prereq. Phys.Ed. 50, 51; VI MTWThF plus 10 hrs. laboratory during the session.) Mr. Stein
63. Organization and Administration of Physical Education. Problems of organization, administration, and supervision in required and elective courses, intramural and inter-school athletics. (3 cred.; jr., sr.; prereq. Phys.Ed. 55; V MTWThF; 214CH.) Mr. Piper
65. Adapted Physical Education Programs. The adaptation of physical education activities to the needs of handicapped individuals. (3 cred.; jr., sr.; prereq. Phys.Ed. 50, 51; III MTWThF; 205CH.) Mr. Osell
- 69,68,67. Coaching of Track, Basketball, Football (2 weeks each). Study of the theory, strategy, and generalship. Styles of offense and defense, methods of organizing practice periods, training of squads, etc. (1 cred. each; jr., sr.; prereq. Phys.Ed. 4A, B, C; II MTWThF; 205CH.) Mr. Bierman, Mr. MacMillan, Mr. Kelly
- 73,74,75.‡ Directed Teaching. Actual practice in teaching physical education activities. (2 cred. each; sr.; prereq. Phys.Ed. 55, Ed. 51A, B, C, junior comprehensive tests, C plus average in major courses, and permission of director of student teaching in the College of Education; 10 to 12 hours a week ar.; 220CH.) Mr. Piper
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. Phys.Ed. 32, 55, and 9 cred. of activity courses; I MTWThF; 214CH.) Mr. Keller
- 116E.§ Community Recreation Resources and Organization. To develop an understanding of the nature, purpose and organization of the various recreational resources in communities. (3 cred.; jr., sr., grad.; prereq. Phys.Ed. 56 or permission of instructor; III MTWThF; 214CH.) Mr. Rickman
135. Tests and Measurements in Physical Education. Critical analysis of existing research studies in physical education with special emphasis upon tests and measurements. Study of existing tests from both practical and theoretical standpoints. Use of tests in the administration of physical activity programs. Application of the principles of test construction to specific problems. (3 cred.; sr., grad.; II MTWThF; 214CH.) Mr. Keller
233. Special Administrative Problems in Physical Education in Secondary Schools. Survey of staff organizations in typical situations such as small towns, cities, states, and schools; construction, maintenance, and policies for use of facilities; purchase, care and use of equipment; legal aspects of physical education and athletic activities. (3 cred.; grad.; IV MTWThF; 214CH.) Mr. Nordly
- 247.* Problems in Health Education, Physical Education, and Recreation. Individual projects and conferences related thereto. (Cred. and hrs. ar.; grad.; 217CH.) Mr. Nordly
250. The Administration of Health Education, Physical Education, and Recreation. Problems of administration from the standpoint of the school administrator. Primarily for school administrators. Not open to majors or minors in physical education. (3 cred.; grad.; V MTWThF; 215CH.) Mr. Nordly

SECOND TERM

Major courses in physical education will be conducted for an hour and a half each day from July 27 through August 24 with the exception of August 18, 19, 20. During these three days students will be permitted to attend the Coaching Clinic sponsored jointly by

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

§ Courses marked "E" carry credit toward the degree of master of education.

the Minnesota High School Coaches' Association, the Minnesota State High School League, and the University of Minnesota Department of Physical Education and Athletics. Students will be restricted to registration in a maximum of 7 credit hours.

- 1B. Handball, Squash, Basketball. (1 cred.; no prereq.; IV MTWThF; CH.) Mr. Roning
- 1B. Beginning Swimming. (1 cred.; no prereq.; VI MTWThF; Rec. Pool, CH.) Mr. Boyce
- 2B. Advanced Swimming and Life Saving. (1 cred.; prereq. ability to swim 100 yards; VIII MTWThF; Vars. Pool, CH.) Mr. Boyce
- 2B. Intermediate Tennis. (1 cred.; no prereq.; VII MTWThF; 4th St. Tennis Courts.) Mr. Piper
- 5C. Softball and Stunts. (1 cred.; Phys. Ed. majors; IV-V MTWThF; CH.) Mr. Shawbold
- 6B. Handball and Squash. (1 cred.; Phys. Ed. majors; V-VI MTWThF; CH.) Mr. Piper, Mr. Shawbold
- 6C. Aquatics. (1 cred.; prereq. ability to swim 100 yards; VII MTWThF; Pools, CH.) Mr. Boyce
- 7C. Recreational Sports—Badminton, Deck Tennis, Aerial Darts, Horseshoes, Table Tennis, Bowling, Archery. (1 cred.; Phys. Ed. majors; VI-VII MTWThF; CH.) Mr. Piper, Mr. Shawbold
8. Tennis and Golf. (1 cred.; Phys. Ed. majors; VIII-IX MTWThF; Fourth Street Tennis Courts and Golf Course.) Mr. Bolstad, Mr. Piper
- 9A. Folk Dancing. (1 cred.; no prereq.; ar.; ar.) Mr. Piper
32. Introduction to Physical Education. An orientation course for teachers. History, vocational significance, and fundamental principles of physical education. (3 cred.; fr.; no prereq.; 9:00 to 10:30 MTWThF; 215CH.) Mr. Bartelma
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.; jr.; prereq. Phys.Ed. 50 or Anat. 57; 10:30 to 12:00 MTWThF; 205CH.) Mr. Osell
- 55.‡ Methods in Physical Education. (See 55, first term.) (4 cred.; jr.; prereq 6 cred. in activity courses or equiv.; 7:30 to 9:00 MTWThF; 215CH.) Mr. Bartelma
66. Officiating Football and Basketball. A study of the high school rules, college rules and techniques of officiating. (2 cred.; jr., sr.; no prereq.; 12:00 to 1:30 MTWThF; 214CH.) Mr. Roning
- 73,74,75.‡ Directed Teaching. Actual practice in teaching physical education activities. (2 cred. each; sr.; prereq. Phys.Ed. 55, Ed. 51A, B, C, junior comprehensive tests, C plus average in major courses, and permission of director of student teaching in the College of Education; 10 to 12 hours a week ar.; 220CH.) Mr. Piper
234. The Secondary School and College Curriculum in Physical Education. Theory and principles of program construction applied to physical education. Critical analysis of existing programs and evaluation of activities in the light of modern trends. Practical application of principles in the construction of a program for a specific situation. (3 cred.; grad.; 9:00 to 10:30 MTWThF; 214CH.) Mr. Nordly
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.; 10:30 to 12:00 MTWThF; 214CH.) Mr. Nordly
- 247.* Problems in Health Education, Physical Education and Recreation. Individual projects and conferences related thereto. (Cred. and hrs. ar.; grad.) Mr. Nordly

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

PHYSICAL EDUCATION FOR WOMEN

TEACHING QUALIFICATIONS

Those interested in teaching physical education in the state of Minnesota must qualify in one of the following professional programs:

1. Courses applying to the nine-credit endorsement for teaching in the state of Minnesota are: Phys.Ed. 4, 10, 11, 12, 13, 16, 18, 21, 37, 41, 52, 53, 61, 64, 65, 73, 84.
2. Courses applying to the state minor in physical education are: Phys.Ed. 4, 10, 11, 12, 13, 16, 18, 21, 37, 41, 51, 52, 53, 61, 64, 65, 73, 84, 90, 116, and Ed.T. 83.
3. Courses applying to the undergraduate major in physical education are: Phys.Ed. 10, 11, 12, 13, 18, 21, 37, 41, 61, 64, 65, 73, 84, Ed.T. 83, and Ed.C.I. 114, Phys.Ed. 116E.
4. Courses applying to the degree of master of education with a major in physical education are: Phys.Ed. 111E, 112E, 113E, 116E, and Ed.C.I. 114; also certain courses in Physical Education for Men.

STUDENT TEACHING

The opportunity of teaching in the University Demonstration School is presented to those who can satisfy the student teaching requirement of the minor, only in the Summer Session. Integration of the physical education program with the regular classroom program is featured wherever possible. Student teaching in the form of directed observation, assistance, and substitution for the regular teacher is carefully supervised.

FACILITIES FOR RECREATION

The swimming pool is open for recreational use from 2:45 to 4:30 p.m. Monday through Friday during both the first and second terms.

The university tennis courts and the university golf course are open to students.

FEES

The rental fee for suits and towels for swimming is 10 cents apiece. 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 5 cents apiece.

The maximum course fee for students taking two or more courses in physical education is \$3.50 per term.

PHYSICAL EXAMINATION

It is recommended that every woman student avail herself of the opportunity offered by the Students' Health Service for a physical examination. Everyone, but especially a teacher, should know her health status. The Department of Physical Education for Women strongly urges every person who is taking one or more activity courses to make an appointment at once for a physical examination at the Health Service. Health Service approval must be secured for participation in swimming classes, recreational swimming, team sports and modern dance.

FIRST TERM

- 1.‡ A Course in Personal Conditioning. ($\frac{1}{2}$ cred.) (Not offered in 1948.)
- 4.‡ Fundamentals of All Rhythmic Work. (1 cred.) (Not offered in 1948.)
- 7.‡ Tennis for Beginners. This course is open to those with little or no experience in tennis. Instruction will include the service, forehand drive, backhand drive, rules and etiquette of the game. Individual coaching will be stressed. Students are required to furnish own rackets and balls. ($\frac{1}{2}$ cred.; no prereq.; V MWF; 151NGW.) Miss Bermingham

‡ A fee of \$1.75 is charged for this course.

- 8.‡ Golf for Beginners. Limited to 20. This course is open to those with little or no experience in golf. The fundamental strokes and individual analysis of the player's game are stressed along with the rules and etiquette of the game. (½ cred.; no prereq.; V TTh and 1 hr. ar.; 60NGW.) Miss Bermingham
- 9.‡ Elementary-Intermediate Golf. (½ cred.) (Not offered in 1948.)
- 10.‡ Teachers' Course in Fundamentals of Physical Education. (1 cred.) (Not offered in 1948.)
- 11.†‡ Modern Dance. Elementary modern dance skills usable in an average high school. Simple adaptations of modern principles of composition. (1 cred.; no prereq.; V MTWTh and 1 hr. ar.; 151NGW.) Miss Sauthoff
- 12.‡ Social Recreation—Ballroom and Country Dance and Mixers. Ballroom dance skills and country dances selected for use in high school teaching. Simple mixers for social groups will be included. (1 cred.; no prereq.; VIII MTWTh and 1 hr. ar.; 151NGW.) Miss Sauthoff
- 13.‡ Tumbling, Stunts, and Pyramids for Junior and Senior High Schools. Instruction and practice in technique of individual, companion, and group tumbling and stunts with progression from elementary to more advanced. Discussion and application of principles underlying pyramid building. Self-testing activities and track and field events for girls of junior and senior high school age. (1 cred.; no prereq.; IV MTWF 1 hr. ar.; 153NGW.) Ar.
- 16.‡ Elementary Tap and Social Dancing. (1 cred.) (Not offered in 1948.)
- 18.‡ Elementary Folk Dancing and Games. (1 cred.) (Not offered in 1948.)
- 21.†‡ Team Sports. Team sports such as soccer, speedball, volleyball, basketball, softball. The high school girls' sports most desired by the class will be stressed. (1 cred.; no prereq.; I MTWTh and 1 hr. ar.; 153NGW.) Miss Ziemer
- 32.†‡ Elementary Swimming. This course is for those who are unable to swim in deep water. Instruction is given in the following aquatic skills: orientation activities, water safety skills, crawl, side stroke and backstroke, and diving for those who desire it. (1 cred.; no prereq.; VI MTWThF; 58NGW.) Miss Eibner
- 33.†‡ Intermediate and Advanced Swimming. This is a course for those who can swim in deep water. Instruction in the following is included: the crawl, side stroke and back crawl, personal water safety skills, diving. The class will be divided into groups according to ability, interests, and experience of the swimmers. (1 cred.; prereq. permission of instructor; VII MTWThF; 58NGW.) Miss Eibner
- 37.‡ Individual and Dual Games. This course deals with the various methods and techniques suitable for the teaching of the following sports: table tennis, archery, badminton, 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 level. This course consists of lectures and laboratory work. (1 cred.; no prereq.; III MTWTh and 1 hr. ar.; 153NGW.) Miss Jaeger
- 41.†‡ Intermediate and Advanced Modern Dance. Modern dance skills and composition will be adapted to intermediate and advanced groups in high school. Some help will be given on organization and types of emphases for modern dance clubs. (1 cred.; prereq. 11 or equiv.; VII MTWTh and 1 hr. ar.; 151NGW.) Miss Sauthoff
- 41.‡ Officiating Team Sports. Practice in officiating such team sports as volleyball, basketball, softball. It is possible to secure *National Official's Rating*. (1 cred.; prereq. permission of instructor; IV MTWF and 1 hr. ar.; 151NGW.) Miss Ziemer

† Health Service approval must be secured for participation in this course.

‡ A fee of \$1.75 is charged for this course.

- 41.†† Gymnastics and Apparatus. Experience with gymnastic movements of Swedish, Danish, and American origin. Apparatus suited to junior and senior high school girls' programs. (1 cred.; prereq. permission of instructor; V MTWTh and 1 hr. ar.; 153NGW.) Ar.
- 51.‡ School Health and Safety Education. (2 cred.) (Not offered in 1948.)
52. Principles and Curriculum of Physical Education. (2 cred.) (Not offered in 1948.)
53. Organization and Administration of Physical Education. (2 cred.) (Not offered in 1948.)
- 61A.†† Technique of Teaching Team Sports. Special techniques for each sport and methods of teaching. Organization of extra-curricular activities. Practice in skills and student teaching within the group. (1 cred.; prereq. 21 and 41 or permission of instructor; II MTWThF; 151NGW.) Miss Ziemer
- 64.†† Technique of Teaching Group Gymnastics. (1 cred.) (Not offered first term.)
- 65.†† Technique of Teaching Individual Sports. Methods and materials for teaching the individual sports which are suitable for a girls' program of physical education on the secondary level. Progression, lead-up games, conduct of tournaments and special methods of organization are particularly stressed. Sports requested by class members will be given special emphasis. (1 cred.; prereq. 21 or 41 or permission of instructor; VI MTWThF; 153NGW.) Miss Jaeger
- 73A.†† Technique of Teaching Rhythm. (1 cred.) (Not offered in 1948.)
- 73B.†† Technique of Folk Dancing. (Not offered in 1948.)
- 83.†† Methods and Materials for School Health Education. (3 cred.) (Not offered in 1948.)
84. Problems in Physical Education. A study of curricular problems in the field of physical education carried on by individuals or groups. The emphasis is on the secondary level. (2 cred.; prereq. experience on elementary or secondary levels; VII MTWTh; 3NGW.) Miss Jaeger
- 90.†† Student Teaching. An opportunity of teaching elementary school children and assisting in college classes will be provided for those who must meet a student teaching requirement in the summer. (1 cred.; prereq. permission of instructor; hrs. ar.) Ar.
- 112E.§ Supervision of Physical Education. Presents a consideration of the function, organization, and administration of supervision in physical education; adaptations of accepted procedures for inspection, guidance, and training of teachers in the field; standards for qualifications of supervisors; problems peculiar to supervision of physical education. (3 cred.; III MTWThF and 1 hr. ar.; 201NGW.) Miss Baker.
- 113E.§ Physical Education in the Elementary Schools. (3 cred.) (Not offered in 1948.)
- 114E.§ The School Health Education Program. (3 cred.) (Not offered first term.)
- 116E.§ Problems in Physical Fitness. (1 to 3 cred.) (Not offered in 1948.)

SECOND TERM

- 2.‡ Games for Recreation. Meets the requirement for college credit, but also open to those simply wishing to learn the skills. Bowling, table tennis, badminton, aerial darts, shuffleboard. (½ cred.; no prereq.; VII MWF; 151NGW.) Miss Jaeger
- 4.‡ Fundamentals of All Rhythmic Work. (1 cred.) (Not offered in 1948.)
- 7.‡ Tennis for Beginners. (See 7, first term.) (½ cred.; no prereq.; V MWF; 151NGW.) Miss Jaeger
- 8.‡ Golf for Beginners. Limited to 20. (See 8, first term.) (½ cred.; no prereq.; V TTh and 1 hr. ar.; 60NGW.) Miss Jaeger

† Health Service approval must be secured for participation in this course.

‡ A fee of \$1.75 is charged for this course.

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

§ Courses marked "E" carry credit toward the degree of master of education.

- 10.‡ Teachers' Course in Fundamentals of Physical Education. (1 cred.) (Not offered in 1948.)
- 12.‡ Social Recreation—Ballroom and Country Dance and Mixers. (See 12, first term.) (1 cred.; no prereq.; V MTWTh and 1 hr. ar.; 151NGW.) Ar.
- 18.‡ Elementary Folk Dancing and Games. (1 cred.) (Not offered in 1948.)
- 21.‡ Team Sports. (See 21, first term.) (1 cred.; no prereq.; II MTWTh and 1 hr. ar.; 153NGW.) Miss Stevning
25. First Aid. Lectures, demonstrations, and practice in emergencies and first aid treatment. Special emphasis on care of injuries in physical education. An American Red Cross Standard Certificate in First Aid is received upon successful completion of this course. (1 cred.; no prereq.; VI MTWThF; 3NGW.) Miss Jaeger
- 32.‡† Elementary Swimming. Class instructions given. (See 32, first term.) (1 cred.; no prereq.; VI MTWThF; 58NGW.) Miss Eibner
- 33.‡† Intermediate and Advanced Swimming. (See 33, first term.) (1 cred.; prereq. permission of instructor; VII MTWThF; 58NGW.) Miss Eibner
- 37.‡ Individual and Dual Games. (Not offered second term.)
- 41.‡ Officiating Team Sports. Practice in officiating such team sports as volleyball, basketball, softball. It is possible to secure *National Official's Rating*. (1 cred.; prereq. permission of instructor; III MTWTh and 1 hr. ar.; 151NGW.) Miss Stevning
52. Principles and Curriculum of Physical Education. (Not offered in 1948.)
53. Organization and Administration of Physical Education. (2 cred.) (Not offered in 1948.)
- 64.‡† Technique of Teaching Group Gymnastics. A study is made of the principles of progression and methods of teaching gymnastics. Student teaching is done within the group. (1 cred.; prereq. permission of instructor; VI MTWTh and 1 hr. ar.; 153NGW.) Miss Stevning
- 65.‡† Technique of Teaching Individual Sports. (1 cred.) (Not offered second term.)
- 73A.‡† Technique of Teaching Rhythm. (1 cred.) (Not offered in 1948.)
- 83.‡† Methods and Materials for School Health Education. (3 cred.) (Not offered in 1948.)
84. Problems in Physical Education. (2 cred.) (Not offered second term.)
- 111E.§ Advanced Course in Methods of Teaching Physical Education. (3 cred.) (Not offered in 1948.)
- 112E.§ Supervision of Physical Education. (3 cred.) (Not offered second term.)
- 113E.§ Physical Education in the Elementary Schools. (3 cred.) (Not offered in 1948.)
- 114E.§ The School Health Education Program. Study of various health organizations in city and state in relation to the school health program; organization of the health education program in the school; construction of the curriculum in school health; evaluation of the school health program; preparation and requirements for teaching school health education; health supervision and guidance. (3 cred.; sr., grad.; prereq. Ed.T. 83, P.H. 50, or equiv., or consent of instructor; IV MTWThF; 201NGW.) Miss Starr
- 115E.§ Philosophy and Trends in Physical Education. (3 cred.) (Not offered in 1948.)
- 116E.§ Problems in Physical Fitness. (1 to 3 cred.) (Not offered in 1948.)

‡ Health Service approval must be secured for participation in this course.

† A fee of \$1.75 is charged for this course.

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

§ Courses marked "E" carry credit toward the degree of master of education.

SCHOOL OF BUSINESS ADMINISTRATION

GENERAL INFORMATION

ADMISSION

For admission to the School of Business Administration a student must have satisfied the requirements of one of the two-year prebusiness courses, either in the College of Science, Literature, and the Arts, the College of Agriculture, Forestry, and Home Economics, or the Institute of Technology. A student must have a minimum of 90 credits, with one honor point per credit or a smaller number of credits determined as follows: For every five honor points in excess of one per credit, the number 90 is diminished by one.

SPECIAL STUDENTS

High school graduates who have reached the age of twenty-four and can furnish evidence that they have had business experience in an executive capacity may be admitted as special students. If later they decide to become candidates for a degree, they must complete the requirements for admission.

STUDENTS IN OTHER SCHOOLS OR COLLEGES OF THE UNIVERSITY

Regularly enrolled students in other schools or colleges of the University may be admitted to such courses in the School of Business Administration as are authorized by the faculties of the School of Business Administration and the school or college concerned. Such students are urged to select their business subjects in accordance with a definite plan, and as far as possible to complete a systematic course of business study.

NOTE—Special provision has been made this summer for the direction of graduate students working on theses. For further information inquire at the office of the dean of the School of Business Administration.

An *asterisk* (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 18.)

FIRST TERM

Econ.3. Elements of Money and Banking. The 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.; 2nd and 3rd qtr. fr., soph., jr., sr.; no prereq.) Mr. Graves and others

Sec. 1, II MTWThF, 257TSF
Sec. 2, III MTWThF, 221VH
Sec. 3, III MTWThF, 207TSV
Sec. 4, IV MTWThF, 205VH

Sec. 5, IV MTWThF, 207TSV
Sec. 6, VI MTWThF, 205VH
Sec. 7, VII MTWThF, 203TSV
Sec. 8, VII MTWThF, 221VH

Econ.5§. Elements of Statistics. Elementary concepts in statistical methods; averages, ratios, errors, sampling, index numbers, graphic representation, collection of material. (3 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq.) Mr. Belcher and others

Sec. 1, I MTWThF, 221VH
Sec. 2, II MTWThF, 210VH
Sec. 3, IV MTWThF, 209TSV

Sec. 4, IV MTWThF, 115VH
Sec. 5, VII MTWThF, 207TSV

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.) Ar.

Sec. 1, I MTWThF, 115VH
Sec. 2, I MTWThF, 205VH
Sec. 3, II MTWThF, 205VH
Sec. 4, III MTWThF, 115VH
Sec. 5, III MTWThF, 205VH

Sec. 6, IV MTWThF, 6VH
Sec. 7, IV MTWThF, 113VH
Sec. 8, VI MTWThF, 115VH
Sec. 9, VII MTWThF, 115VH
Sec. 10, VII MTWThF, 205VH

§ Not open to students who have received credit in Soc. 45 or B.A. 70.

¶ To receive credit for this course a student must complete Econ. 7.

Econ.22. Principles of Accounting. The balance sheet, profit and loss statement, the recording process, special journals and ledgers, adjustments, work sheets, closing, and the voucher system. (4 cred.; soph., jr., sr.; no prereq.) Mr. Lund and others.

- Sec. 1, I MTWThF, 307VH, VI-VII M, 306VH
 Sec. 2, I MTWThF, 306VH, VIII-IX M, 306VH
 Sec. 3, II MTWThF, 307VH, VI-VII T, 306VH
 Sec. 4, II MTWThF, 306VH, VIII-IX T, 306VH
 Sec. 5, III MTWThF, 307VH, VI-VII W, 306VH
 Sec. 6, III MTWThF, 306VH, VIII-IX W, 306VH
 Sec. 7, IV MTWThF, 307VH, VI-VII Th, 306VH
 Sec. 8, IV MTWThF, 306VH, VIII-IX Th, 306VH

Econ.32.‡ Beginning Typewriting. Personal use factors; keyboard technique for touch typing; letter arrangement; speed development. (1 cred.; fr., soph., jr., sr.; no prereq.; IV MTWThF, VII MWF; 209VH.) Miss Riley

Econ.39.‡‡ Intermediate Shorthand. Refresher course; review of 5,000 most-used Gregg shorthand forms; mailable letters transcribed from dictation. (3 cred.; soph., jr., sr.; prereq. Econ. 38, one year of high school shorthand, 60 words per minute on Gregg five-minute test material, or consent of instructor; I MTWThF, VI MWF; 209VH.) Miss Riley

Econ.50. Insurance Principles. An introductory course dealing with the nature and measurement of risk and the development and uses of personal, property, and liability insurance. Forms of protection; policy contracts; social insurance and government regulation. (3 cred.; jr., sr.; prereq. Econ. 6-7 or 83.) Mr. Graves

- Sec. 1, V MTWThF, 1VH Sec. 2, VIII MTWThF, 1VH

B.A.51.‡‡ Business Law: Contracts. A discussion of the law of contracts. (3 cred.; jr., sr.; prereq. Econ. 6-7.) Mr. Neville and others

- Sec. 1, I MTWThF, 6VH Sec. 4, II MTWThF, 115VH
 Sec. 2, I MTWThF, 203TSV Sec. 5, III MTWThF, 209TSV
 Sec. 3, II MTWThF, 209TSV Sec. 6, III MTWThF, 203TSV

B.A.58. (See Econ. 189.)

B.A.71. (See Econ. 172.)

B.A.77.‡‡‡ Survey in Marketing. Survey course including 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.; jr., sr.; prereq. Econ. 6-7; VII MTWThF; 4VH.) Ar.

B.A.86. Office Management. The office as a producing unit; office organization, equipment, and layout; development of office standards and routines; relation of the office to operating divisions; scientific management of office work. (3 cred.; jr., sr.; prereq. Econ. 6-7.) Miss Peterson

- Sec. 1, II MTWThF, 221VH Sec. 2, III MTWThF, 6VH

B.A.89. Production Management. Location and layout of industrial plants; types of operating organization; shop personnel; standards of operation; purchasing and inventory control; routing, scheduling, and dispatching of product; scientific management; practical problems in production control. (3 cred.; jr., sr.; prereq. Econ. 6-7 or equiv.)

- Sec. 1, IV MTWThF, 207VH, Mr. Filipetti
 Sec. 2, V MTWThF, 4VH, Mr. Luther

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

‡ A fee of \$2.50 per quarter is charged students registering for either or both Econ. 32 and 39.

‡‡ To receive credit a student must complete B.A. 51 and either 52 or 53.

‡‡‡ A student may not receive credit for both Econ. 185 and B.A. 77.

B.A.91. Tabulating Equipment Laboratory. The basic functions of tabulating equipment; illustrations of its use in special accounting, statistical, and production analysis; and its use for general accounting and statistical control of business operations. (1 cred.; jr., sr.; prereq. Econ. 26 and either Econ. 5 or B.A. 70.) Mrs. Boehmler

Sec. 1, VI-VII MW, 6VH

Sec. 2, VI-VII, TTh, 6VH

B.A.93. Accounting Laboratory. A long practice problem will be worked under supervision. Required of majors in accounting and in commercial education. (1 cred.; jr., sr.; prereq. Econ. 26.) Mrs. Boehmler

Sec. 1, VIII-IX MW, 307VH

Sec. 2, VIII-IX TTh, 307VH

B.A.101. Advanced General Economics. (For the Summer Session this course is the equivalent of Econ. 103.) A detailed analysis of price determination under competitive and monopolistic conditions, with special emphasis on rigorous training in the techniques of modern economic analysis. The major topics are laws of return, demand curves, cost curves, and short and long run prices under various types of competition. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83.) Mr. Boddy and others.

Sec. 1, I MTWThF, 207TSV

Sec. 5, IV MTWThF, 4VH

Sec. 2, I MTWThF, 209TSV

Sec. 6, IV MTWThF, 203TSV

Sec. 3, II MTWThF, 1VH

Sec. 7, V MTWThF, 207TSV

Sec. 4, II MTWThF, 301VH

Sec. 8, VII MTWThF, 209TSV

Econ.103. (See B.A. 101.)

B.A.112.† Business Statistics. Survey and criticism of methods used in analyzing time series, with special applications to the study of cyclical fluctuations of economic phenomena. (3 cred.; jr., sr., grad.; prereq. Econ. 5 or B.A. 70.) Mr. Mudgett

Sec. 1, II MTWThF, 113VH

Sec. 2, III MTWThF, 113VH

B.A.118. Auditing Procedure. A laboratory course in auditing procedure. Class instruction in auditing technique and the preparation of a complete set of working papers and an audit report. (3 cred.; jr., sr., grad.; prereq. B.A. 139 or 151; III TTh, VII-VIII MWF; 301VH.) Mr. Lund

B.A.130.‡ Cost Accounting Survey. A general survey of cost accounting from the point of view of the executive who must use cost information in the conduct of his business. (3 cred.; jr., sr., grad.; prereq. Econ. 23 or Econ. 26.)

Sec. 1, I MTWThF, 207VH, Mr. Wheeler

Sec. 2, VI MTWThF, 2VH, ar.

B.A.134. Income Tax Accounting. The principles involved in determining taxable net income and the computation of federal and state income taxes for corporations, individuals, and trusts. (3 cred.; jr., sr., grad.; prereq. B.A. 139 or 150-151; IV MTWThF; 2VH.) Mr. Reighard

B.A.136. Internal Auditing and Accounting Control. Accounting systems and methods as related to internal check and audit control of routine transactions and the establishment of administrative and budgetary control. (3 cred.; jr., sr., grad.; prereq. B.A. 139 or 150-151; II MTWThF; 203TSV.) Mr. Reighard

Econ.140. The Cooperative Movement. The history and philosophy of various cooperative developments. Similarities and contrasts between such movements as agricultural marketing cooperatives, consumer cooperatives, trade unions, and others. Consumer cooperation as a medium for economic control. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; VI MTWThF; 207VH.) Miss Canoyer

Econ.142. Monetary and Banking Policy. The problems of a central bank and the theory of the value of money. Includes control of reserves, providing a scientific currency, regulation of credit; fluctuations of the general price level—their causes and pos-

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

sible reduction. (3 cred.; jr., sr., grad.; prereq. Econ. 3 and either 6-7 or 83; IV MTWThF; 166Ph.) Mr. Uppgren

B.A.146. Investments. A general survey of the external and internal factors influencing the prices of securities and of the principles of an investment policy for the needs of the average conservative investor. (3 cred.; jr., sr., grad.; prereq. Econ. 155; IV MTWThF; 221VH.) Mr. Stehman

Econ.149.* Business Cycles. Analysis of factors involved in business fluctuations. Comparison of theories of the cause of prosperity and depression. Introduction to the statistical data and methods of business forecasting. (3 cred.; sr., grad.; prereq. Econ. 142 or consent of instructor; III MTWThF; 207VH.) Mr. Uppgren

B.A.150.‡ Intermediate Accounting. A course in the practice and technique of accounting for students who intend to specialize in accounting. (3 cred.; jr., sr., grad.; prereq. Econ. 23 or Econ. 26.)

Sec. 1, I MTWThF, 113VH, Mr. Nelson
Sec. 2, VI MTWThF, 113VH, ar.

B.A.152. Cost Accounting. The basic principles of cost accounting with special reference to the job order cost system. (3 cred.; jr., sr., grad.; prereq. Econ. 23 or Econ. 26.)

Sec. 1, III MTWThF, 2VH, Mr. Wheeler
Sec. 2, VII MTWThF, 113VH, ar.

Econ.155. Corporation Finance: Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporation. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83.)

Sec. 1, II MTWThF, 207VH, Mr. Stehman
Sec. 2, VI MTWThF, 203TSV, Mr. Borak

Econ.161. Labor Problems and Trade Unionism. A discussion of employment, hours, wages, types of unionism, policies and practices of labor organization. Special emphasis upon economic implications of modern working conditions. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83.)

Sec. 1, I MTWThF, 1VH, Mr. Childs
Sec. 2, VI MTWThF, 1VH, Mr. Kuhlmann

Econ.162. Labor and Socialist Movements. Analysis of structure and operation of American labor unions. An interpretation of leading labor movements in Europe and the United States during the last century. (3 cred.; jr., sr., grad.; prereq. Econ. 161; VII MTWThF; 2VH.) Mr. Kuhlmann

B.A.167. Introduction to Industrial Relations. Evaluation of managerial policies and devices designed to secure the cooperation and efficient participation of employees in business, industry, and government. Attention is directed especially to the determination of labor needs, job analysis and classification, methods of recruiting workers, selective devices, training and safety programs, service rating, employment stabilization, collective bargaining, and compensation. (3 cred.; jr., sr., grad.; prereq. Econ. 161.)

Sec. 1, II MTWThF, 2VH, Mr. Childs
Sec. 2, II MTWThF, 207TSV, ar.

B.A.170.‡ Motion Economy. Fundamental principles and techniques of motion economy, workplace layout, motion picture applications, operation analysis, output standards, stop-watch procedure, and cost-savings estimates. Materials: text, readings, motion picture films. (3 cred.; jr., sr., grad.; prereq. B.A. 184; VI MW, VI-VII TTh; 301VH.) Mr. Luther

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

Econ.172. Economics of Transportation. (For the Summer Session this course is the equiv. of B.A. 71.) An analysis of the economics of the agencies of modern transportation, including rail, water, highway, air, and pipe line. Relative advantage of each agency, national transportation policy, regulation, rate-making, taxation, co-ordination of services. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83.) Mr. Nightingale

Sec. 1, III MTWThF, 1VH

Sec. 2, VI MTWThF, 4VH

Econ.175. Government Regulation of Business. A general course on the economic aspects of legislation affecting the pricing process and the distribution of the national income. Topics studied include economic origins of modern business limitations on free competition; regulation of public utilities, trusts and combinations, and "unfair competitive practices"; positive assistance to industrial groups. (3 cred.; jr., sr., grad.; prereq. 20 cred. in soc. sci. including Econ. 6-7 or 83.)

Sec. 1, IV MTWThF, 1VH, Mr. Papandreou

Sec. 2, VII MTWThF, 1VH, Mr. Papandreou

Econ.178. Economics of Consumption. A descriptive and analytical survey of the price-making process; the origins and the personal distribution of money income and purchasing power; planes of living in the United States; "ideal" standards of living; possibilities for improvement in the plane of consumption. Not open to majors in economics or business administration. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; IV MTWThF; 210VH.) Miss Canoyer.

B.A.180C. Senior Topics: Marketing. Selected topics in market research and the marketing of manufactured consumer goods. (3 cred.; sr.; II MTWThF; 6VH.) Mr. Vaile.

B.A.180D.* Senior Topics: Industrial Relations. A discussion of personnel problems exemplified in cases; individual investigations of various phases of personnel administration. (3 cred.; sr., grad.; prereq. B.A. 167; II MTWThF; 4VH.) Mr. Yoder.

B.A.183. Practice Course. Students engaged in outside work on the cooperative plan may register for this course for credit under the following conditions: The type of employment to be undertaken must be approved in advance by the major adviser. The student must register for the course at the beginning of the term during which the work is to be done. Grades are based upon a report from the student's employer and a formal written report presented by the student not later than mid-term following his return to the University. Applications for positions on the cooperative plan and admission to the course may be made at any time at the dean's office. (Cred. ar.; jr., sr., grad.; prereq. consent of adviser; hours to be arranged.) Mr. Reighard

B.A.184. Scientific Management in Industry. A study of 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 "rationalization" in industrial society. (3 cred.; sr., grad.; prereq. Econ. 6-7; VII MTWThF; 207VH.) Mr. Filippetti

Econ.185.†† Economics of Marketing. (For the Summer Session this course may be substituted for B.A. 77.) A course dealing with (1) the role of market distribution in our total economy; (2) the costs of market distribution; (3) regional specialization and market distribution; (4) public, quasi-public and corporate control of market distribution; (5) the role of the consumer in market distribution. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83.)

Sec. 1, I MTWThF, 4VH, Mr. Vaile

Sec. 2, I MTWThF, 2VH, ar.

†† Credit may not be received for both Econ. 185 and B.A. 77.

Econ.189.¶ Principles of Taxation. (For the Summer Session this course is the equivalent of B.A. 58.) Development of taxation; property, income, commodity, sales, inheritance, and other taxes; shifting incidence and other effects; federal, state, and local relations; special problems. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; III MTWThF; 4VH.) Mr. Borak

SECOND TERM

Econ.3. Elements of Money and Banking. (See Econ. 3, first term.) (3 cred.; 2nd and 3rd qtr. fr., soph., jr., sr.; no prereq.) Ar.

Sec. 1, II MTWThF, 221VH

Sec. 3, IV MTWThF, 115VH

Sec. 2, II MTWThF, 210VH

Sec. 4, VII MTWThF, 221VH

Econ.5.§ Elements of Statistics. (See Econ. 5, first term.) (3 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq.) Mr. Belcher and others

Sec. 1, I MTWThF, 221VH

Sec. 4, III MTWThF, 210VH

Sec. 2, II MTWThF, 205VH

Sec. 5, VI MTWThF, 115VH

Sec. 3, III MTWThF, 203TSV

Econ.7. Principles of Economics. A continuation of Econ. 6. (3 cred.; soph., jr., sr.; prereq. Econ. 6.) Ar.

Sec. 1, I MTWThF, 115VH

Sec. 6, IV MTWThF, 6VH

Sec. 2, I MTWThF, 205VH

Sec. 7, IV MTWThF, 113VH

Sec. 3, II MTWThF, 115VH

Sec. 8, VI MTWThF, 2VH

Sec. 4, III MTWThF, 115VH

Sec. 9, VII MTWThF, 2VH

Sec. 5, III MTWThF, 205VH

Sec. 10, VII MTWThF, 113VH

Econ.23. Principles of Accounting. Partnership, profit-sharing, dissolution; corporation accounting—capital stock, surplus, dividends, reserves, funds, bonds, departmental accounting, branch accounting, manufacturing statement analysis and interpretation. (4 cred.; soph., jr., sr.; no prereq.)

Sec. 1, I MTWThF, 307VH, VI-VII M, 306VH

Sec. 2, I MTWThF, 306VH, VIII-IX M, 306VH

Sec. 3, II MTWThF, 307VH, VI-VII T, 306VH

Sec. 4, II MTWThF, 306VH, VIII-IX T, 306VH

Sec. 5, III MTWThF, 307VH, VI-VII W, 306VH

Sec. 6, III MTWThF, 306VH, VIII-IX W, 306VH

Sec. 7, IV MTWThF, 307VH, VI-VII Th, 306VH

Sec. 8, IV MTWThF, 306VH, VIII-IX Th, 306VH

B.A.52. Business Law: Agency, Partnership, and Corporations. The law of agency and a consideration of problems of partnerships and corporations. (3 cred.; jr., sr.; prereq. B.A. 51.) Mr. Neville and others

Sec. 1, I MTWThF, 6VH

Sec. 4, II MTWThF, 113VH

Sec. 2, I MTWThF, 203TSV

Sec. 5, III MTWThF, 6VH

Sec. 3, II MTWThF, 6VH

Sec. 6, III MTWThF, 113VH

B.A.58.¶ Elements of Public Finance. Public expenditures, revenues, debts, fiscal policy and financial administration. Special attention is given to tax principles, practices, burdens, and coordination of national, state, and local finance. This is a condensed course given especially for School of Business Administration students. (3 cred.; jr., sr.; prereq. Econ. 6-7; VI MTWThF; 1VH.) Ar.

B.A.68. Sales Management. Organization and direction of sales methods and men from the sales manager's point of view; determination of selling policy; product and market research; sales planning and research; selection of distribution methods; sales campaigns and quotas; incentives and compensation for salesmen; training in salesmanship; supervision and control. Case studies and discussions. (3 cred.; jr., sr.; prereq. B.A. 77; I MTWThF; 113VH.) Mr. Lewis

¶ Credit may not be received for both Econ. 189 and either B.A. 58 or Econ. 191-192.

§ Not open to students who have received credit in Soc. 45 or B.A. 70.

- B.A.77. (See Econ. 185.)
- B.A.89. Production Management. (See B.A. 89, first term.) (3 cred.; jr., sr.; prereq. Econ. 6-7 or equiv.; V MTWThF; 4VH.) Mr. Luther
- B.A.91. Tabulating Equipment Laboratory. (See B.A. 91, first term.) (1 cred.; jr., sr.; prereq. Econ. 26 and either Econ. 5 or B.A. 70.) Mrs. Boehmler
 Sec. 1, VI-VII MW, 6VH Sec. 2, VI-VII TTh, 6VH
- B.A.93. Accounting Laboratory. (See B.A. 93, first term.) (1 cred.; jr., sr.; prereq. Econ. 26.) Mrs. Boehmler
 Sec. 1, VIII-IX MW, 307VH Sec. 2, VIII-IX TTh, 307VH
- B.A.94. Cost Accounting Laboratory. The design and operation of a special order, and a multiple process cost accounting system. (1 cred.; jr., sr.; prereq. B.A. 152 or concurrent.) Mr. Anderson
 Sec. 1, VI-VII MW, 307VH Sec. 2, VI-VII TTh, 307VH
- B.A.102. Advanced General Economics. (A continuation of B.A. 101.) (For the Summer Session this course is the equiv. of Econ. 104.) Theory of the distribution of wealth and income. General distribution theory, wages, rent, and interest. (3 cred.; jr., sr., grad.; prereq. B.A. 101 or Econ. 103.) Mr. Boddy and others
 Sec. 1, I MTWThF, 4VH Sec. 5, III MTWThF, 207VH
 Sec. 2, I MTWThF, 2VH Sec. 6, III MTWThF, 4VH
 Sec. 3, II MTWThF, 2VH Sec. 7, V MTWThF, 1VH
 Sec. 4, II MTWThF, 203TSV Sec. 8, VII MTWThF, 1VH
- Econ.104. (See B.A. 102.)
- B.A.112.† Business Statistics. (See B.A. 112, first term.) (3 cred.; jr., sr., grad.; prereq. Econ. 5 or B.A. 70.) Ar.
 Sec. 1, II MTWThF, 207VH Sec. 2, IV MTWThF, 207VH
- B.A.133. Standard Costs. The methods of standard costs. The meaning of standards. The setting of standards for materials, labor, and overhead. The analysis of and accounting for variations. The development and application of standards to distribution as well as to production activities. (3 cred.; jr., sr., grad.; prereq. B.A. 130 or 152-153; I MTWThF; 207VH.) Mr. Ostlund
- Econ.142. Monetary and Banking Policy. (See Econ. 142, first term.) (3 cred.; jr., sr., grad.; prereq. Econ. 3 and either 6-7 or 83; II MTWThF; 4VH.) Mr. Myers
- Econ.149.* Business Cycles. (See Econ. 149, first term.) (3 cred.; sr., grad.; prereq. Econ. 142 or consent of instructor; IV MTWThF; 1VH.) Mr. Myers
- B.A.151.† Intermediate Accounting. A continuation of B.A. 150. (3 cred.; jr., sr., grad.; prereq. B.A. 150.)
 Sec. 1, IV MTWThF, 2VH, Mr. Heilman
 Sec. 2, VI MTWThF, 207VH, ar.
- B.A.153. Cost Accounting. Process costs; joint and by-products; estimating cost systems; standard costs; costs applied to distribution; managerial use of costs. (3 cred.; jr., sr., grad.; prereq. B.A. 152 or B.A. 130.)
 Sec. 1, III MTWThF, 2VH, Mr. Ostlund
 Sec. 2, VII MTWThF, 4VH, ar.
- Econ.161. Labor Problems and Trade Unionism. (See Econ. 161, first term.) (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83.)
 Sec. 1, I MTWThF, 1VH, Mr. Childs
 Sec. 2, IV MTWThF, 4VH, Mr. Fisher

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

- Econ.164. Labor Legislation and Social Insurance. A course dealing with the economic aspects of labor legislation, including minimum wage laws; hours legislation; factory acts; accident, health, old age, and unemployment compensation; mothers' pensions. (3 cred.; jr., sr., grad.; prereq. Econ. 161; III MTWThF; 207TSV.) Mr. Fisher
- B.A.167. Introduction to Industrial Relations. (See B.A. 167, first term.) (3 cred.; jr., sr., grad.; prereq. Econ. 161; II MTWThF; 1 VH.) Mr. Childs
- B.A.171.‡ Production Standards. Laboratory projects selected from, and contributory to improvement of, basic clerical operations, office practice, and merchandising procedures, emphasizing application of motion economy principles. Final report required for each project. (3 cred.; jr., sr., grad.; prereq. B.A. 170; VI MW, VI-VII TTh; 301VH.) Mr. Luther
- B.A.181A. Senior Topics: Accounting. Financial reporting standards under S.E.C.; financial analyses. (3 cred.; sr., grad.; prereq. B.A. 151 or 139; III MTWThF; 221VH.) Mr. Heilman
- Econ.185.†† Economics of Marketing. (For the Summer Session this course may be substituted for B.A. 77.) (See Econ. 185, first term.) (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; III MTWThF; 1 VH.) Mr. Lewis

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

†† Credit may not be received for both Econ. 185 and B.A. 77

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 23. Applications for the enrolment of children will be received at the office of the Institute. The fee will be \$25 for tuition, which includes orange juice and lunch at noon.

Responsibility for transportation to and from schools must be taken by the parents.

FIRST TERM

40. Child Training. The physical and mental development of the child. The training of young children. Observations in the Nursery School, lectures, and reports. (3 cred.; soph., jr., sr.; prereq. Psy. 1-2; IV MTWThF; 202Pt.) Mrs. Cummings
80. Child Psychology. A survey of child psychology and its applications. (3 cred.; jr., sr.; prereq. Psy. 1-2; I MTWThF; 202Pt.) Miss Peterson
131. Personality, Emotional and Social Development of the Child. Interpretation of the scientific literature. Lectures, readings, and reports. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.; I MTWThF; 200Pt.) Miss Templin
140. Behavior Problems in Younger Children. (Same as S.W. 243.) Nature, origin and treatment of behavior difficulties in young children. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; III MTWThF; 202Pt.) Miss Templin
- 150.‡ Problems of Childhood Education. (Same as Ed.C.I. 130.) Lectures and readings on the philosophy and current methods of early childhood education. (3 cred.; sr., grad.; prereq. 12 cred. in ed.; IV MTWThF; 200Pt.) Mrs. Fuller
151. Childhood Education. History and philosophy, organization and administration, methods and materials of early childhood education. (3 cred.; sr., grad.; prereq. 12 cred. in ed.; II MTWThF; 202Pt.) Mrs. Fuller
170. Parent Education. History and survey of programs, materials, and methods. Administration and organization. Lectures, discussions, and reports. (3 cred.; sr., grad.; prereq. 15 cred. in psy., ed., home econ., or soc.; II MTWThF; 200Pt.) Mrs. 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 meets the approval of instructor. (Cred. ar.; grad. students only; hrs. ar.) Staff

The following courses, Ed.T. 56, Methods and Observation in the Nursery School and Kindergarten; Ed.T. 57, Nursery School-Kindergarten Laboratory in Art, Literature, and Social Studies, listed under Methods and Directed Teaching on page 120, are also offered by the Institute of Child Welfare in the College of Education.

SECOND TERM

80. Child Psychology. A survey of child psychology and its applications. (3 cred.; jr., sr.; prereq. Psy. 1-2; II MTWThF; 202Pt.) Miss Holbrook

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

130. Motor, Linguistic, and Intellectual Development of the Child. Interpretation of the scientific literature. Lectures, readings, and reports. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.; I MTWThF; 202Pt.) Mr. Harris
132. Later Childhood and Adolescence. Growth, social adjustment, emotional, mental, and personality development. Leisure-time activities, educational and vocational interests. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.; III MTWThF; 202Pt.) Mr. Harris
141. Behavior Problems in Older Children. (Same as S.W. 244.) Nature and origin of behavior difficulties in older children, with particular reference to readjustment in adolescence. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; II MTWThF; 200Pt.) Miss Blodgett
142. Psychology of Atypical Children. A survey of the scientific literature on children with physical and mental handicaps. Emphasis upon personal, social and vocational adjustment. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; IV MTWThF; 202Pt.) Miss Blodgett
- 270.* Readings and Research in Child Development. (See 270, first term.) (Cred. ar.; grad. students only; hrs. ar.) Mr. Harris

LIBRARY INSTRUCTION

In the Summer Session the Division of Library Instruction offers a series of integrated eight-week terms which allow a student to complete the full library course in four summers. During these eight weeks, basic courses will be offered for beginners and advanced courses for students who have already partially completed the program.

NOTE—Course numbering follows that of the revised curriculum; see the *Division of Library Instruction Announcement* for the years 1947-49.

Fees for the eight-week term include: tuition \$40, incidental fee \$8, deposit \$2, total \$50.

In order to provide for completion of courses in the proper sequence in subsequent Summer Sessions, students enrolling in the division for the first time who plan to complete a major should register for the following courses:

Lib.Sci. 50	3 credits	Lib.Sci. 62	2 credits
Lib.Sci. 60	3 credits	Pol.Sci. 121	3 credits

FIRST TERM (8 Weeks)

June 14–August 6

- Lib.Sci.50. Libraries and Society. History of libraries; types of libraries, library agencies and services; libraries in the modern world; librarianship as a profession. (3 cred.; no prereq.; II MWF and 1 hr. ar.; 5Lib.) Mr. Strout
- Lib.Sci.51. Origins of the Book. Survey of writing and the materials and methods of writing from earliest times through the spread of printing in the fifteenth century. (2 cred.; no prereq.; III TTh and 1 hr. ar.; 5Lib.) Mr. Strout
- Lib.Sci.53. School Library Administration and Practice. The organization and management of libraries in schools. (4 cred.; prereq. Ed. 51A-B-C, or Ed.Ad. 263, or Pol. Sci. 121; II MWF and 2 hrs. ar.; 3Lib.) Ar.
- Lib.Sci.54. Public Library Administration. Management problems in public libraries; finance, personnel, equipment, extension work, etc. (3 cred.; prereq. Pol.Sci. 121; I MWF and 1 hr. ar.; 3Lib.) Miss Stratton
- Lib.Sci.55. College Library Administration. A survey of administrative problems in libraries of institutions of higher education. (3 cred.; prereq. Pol.Sci. 121 or Ed.Ad. 253; I MWF and 1 hr. ar.; 339Lib.) Mr. Strout
- Lib.Sci.56. Current Issues. Reading in professional library literature on the unsolved problems and current issues of librarianship. (1 cred.; prereq. 15 cred. in Lib.Sci.; IV T and 1 hr. ar.; 5Lib.) Ar.
- Lib.Sci.60. Sources of Information about Library Materials. Reviewing media, "best" lists, trade bibliographies, etc. Principles of book selection and order work. (3 cred.; no prereq.; III MWF and 1 hr. ar.; 5Lib.) Miss Stratton
- Lib.Sci.61. Library Practice. Practice under supervision in Minneapolis and St. Paul libraries. The time and character of the practice will be individually arranged to suit student aptitudes and needs. (1-3 cred.; prereq. 15 cred. in Lib.Sci. or satisfactory library experience.) Mr. Strout and others
- Lib.Sci.62. Reference I. General reference tools and other sources of information in reference work; theory and practice of reference work. (2 cred.; no prereq.; II TTh and 1 hr. ar.; 5Lib.) Mr. Barnes
- Lib.Sci.64. Reference III. Specialized reference tools; government publications; administration of the reference department; special problems in large libraries. (2 cred.; prereq. Lib.Sci. 62, 63; I TTh and 1 hr. ar.; 3Lib.) Mr. Barnes

- Lib.Sci.72. Reading Guidance for Adolescents. Book selection and reading guidance for the adolescent; the adolescent in the public library and in the high school library. (3 cred.; prereq. Lib.Sci. 70; IV MWF and 1 hr. ar.; 5Lib.) Ar.
- Lib.Sci.73. Reading Guidance for Adults. Factors affecting adult use of the library; reading interests of adults; book selection for adults; biography of the book world. (3 cred.; prereq. Lib.Sci. 70; IV MWF and 1 hr. ar.; 3Lib.) Miss Stratton
- Lib.Sci.85. Special Problems. Individual study on library problems for advanced students in Library Science. (1-3 cred.; prereq. approval of director, Division of Library Instruction; ar.; ar.) Mr. Strout and others
- Pol.Sci.121. Municipal Administration. A general survey of overhead administration with special emphasis upon such topics as administrative organization, personnel, purchasing, contracting, budgeting, accounting, reporting. (3 cred.; 6 weeks; jr., sr., grad.; prereq. 120 or consent of instructor; I MTWThF; 5Lib.) Mr. Ludwig

THE GENERAL COLLEGE

GENERAL INFORMATION

The General College was established by the University of Minnesota in 1932 in response to a clearly demonstrated need. A study of enrolment figures had indicated that too many students were dropping out of college before they completed more than one or two years. Too many were receiving only a fragmentary and unrelated college education, since they took only the introductory courses, which were organized primarily as a foundation for later more specialized work. Too many were being dropped for low scholarship who could profit socially and individually from a college program geared more directly to their needs and interests. The newly-established program was clearly a successful step forward in conserving human resources.

One of the primary aims of the General College was and is to offer a program of studies better suited to the students who were coming to college, rather than attempting to make the students fit into the traditional college curriculum. The courses are broad in scope, stressing understanding of basic principles and relationships to other fields of knowledge. Some of the courses and areas deal with common human activities (called orientation areas) in addition to others which are organized around the more traditional subject matter content.

Four major groupings have been made into these orientation areas. They are organized around those problems which confront a person who is adjusting himself (1) to his status as a worker, (2) to his duties and responsibilities as a citizen, (3) to his relationships within a family group, and (4) to a clarification and application of the basic values and interests which are essential to him as an individual. This kind of education, which prepares people for their common activities in our present-day complex society, is usually referred to as *general education*. General education aims to provide for the development of the common understandings, abilities, insights, and appreciations for the personal and social activities basic to normal human living and participation in a democratic society.

The degree of associate in arts is conferred by the University upon students who successfully complete a two-year program in the General College.

Admission to the General College requires graduation from an accredited high school or satisfactory performance on University entrance tests, but no specific pattern of high school subjects is required. Students who do not qualify for admission to other colleges of the University because of inadequate preparation or poor high school record may remedy these deficiencies or demonstrate their ability to handle work of college caliber through a careful selection of courses in the General College. Students who successfully demonstrate this ability may make application to transfer to another college of the University without undue loss of time or credit.

The regular *General College Bulletin*, which may be received upon request from the Office of Admissions and Records of the University, indicates in detail the requirements for the associate in arts degree, general regulations, and additional general information. All students entering the General College for the first time are required to take an overall 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 offered during the summer terms, see the regular bulletin of the General College.

FIRST TERM

- 1A. Individual Orientation. A study of the purposes of general education; aids in adjustment of the new student to college, with a major emphasis upon development of students' insight into their personal problems. (3 cred.; open to 1st quarter fr. and others by permission of instructor; no prereq.; V MTWThF; 202WeH.) Mr. Gamelin
2. Vocational Orientation. Various projects are undertaken which are designed to assist the individual student to examine his vocational possibilities systematically and to develop a flexible and realistic vocational plan. (5 cred.; all; no prereq.; III-IV MTWThF; 202WeH.) Mr. Borow
4. Problems of Contemporary Society. Emphasis on analysis of world problems resulting from the Industrial Revolution; the understanding of the causes of war, unemployment, and overproduction. Contemporary America and the obligations and responsibility of individuals in contributing to the solution of world problems. (3 cred.; all; no prereq.; I MTWThF; 201WeH.) Mr. McCune
- 7D. Physical Science: Elements of Geology. This course treats the portion of the natural sciences which considers the history and structure of the earth. Use is made of the local environment as much as possible in the study of various geological features. (5 cred.; all; no prereq.; VI-VII MTWThF; 110P.) Mr. 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; 201WeH.) Mr. 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; 201WeH.) Mr. Cieslak
15. Clothing Selection, Purchase, and Care. This course is based on problems involved in the choice and care of men's and women's clothing. Attention is given to methods of fiber identification, clothing construction, quality, and advertising. (3 cred.; all; no prereq.; II MTWThF; 206WeH.) Miss Bayor
- 22A.‡‡ Art Today. Promotes an understanding of the materials and methods used by modern artists in many fields—architecture, industrial art, commercial design, painting, sculpture, and the graphic processes. The course work consists of illustrated lectures, discussion, laboratory work, and field trips. (3 cred.; all; no prereq.; IV MTWThF; 206WeH.) Mr. Hulse
- 23A.‡‡ Art Laboratory. Work in the Art Laboratory gives students actual experience in art production. Problems of the laboratory are individual and may be selected according to the student's own needs and interests. No special skills necessary. (3 cred.; all; no prereq.; II-III MTWThF; 301WeH.) Mr. Hulse
- 24A.‡‡ Music Today. A study of the elements out of which music is made: rhythm, melody, harmony, and tone color. There is also an investigation of the problems of organization across the entire field of musical activity. No special ability or previous knowledge of music is required. (2 cred.; all; no prereq.; VI MTWTh; 202WeH.) Mrs. Yohe
- 30A. Literature Today: The Individual and Literature. This course deals with modern essays, plays, short stories, and poems, with application to the individual reader's experience and interpretation of the problems of everyday life. (3 cred.; all; no prereq.; V MTWThF; 206WeH.) Miss Kivits

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

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

- 30E. *Literature Today: An Introduction to World Literature.* A study through selected readings of how the people of ancient and modern times in the Orient, the Near East, and Europe sought to understand and solve essentially the same problems of life as we face today. The writers studied are selected because their ideas are alive today and speak to and for all nations. (3 cred.; all; no prereq.; I MTWThF; 2P.) Mr. 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; 302WeH.) Mr. Appel
- 31B. *Writing Laboratory: Organization and Writing.* This course is planned to aid the student in organizing his own ideas clearly and forcefully. The student is encouraged not only to question, analyze, and evaluate what he thinks, but also to present his opinions in critical, purposeful writing. (3 cred.; all; prereq. 31A; I-II MWF; 302WeH.) Miss Kivits
- 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; V-VI MWF; 302WeH.) Miss Sheldon
- 32A. †† *Speech Laboratory: Personality and Language.* 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.; IV MTWThF; 306WeH.) Mr. Gamelin
- 32B. †† *Speech Laboratory: Voice and Interpretation.* Voice, diction, and interpretative reading. The speech mechanism and proper voice production methods are studied and individual voice problems are analyzed. The principles learned are applied to oral interpretation of the printed page in actual group situations. (3 cred.; all; no prereq.; V MTWThF; 306WeH.) Mrs. Graves
- 33A. †† *Speech Studio.* A basic course in microphone technique and radio broadcasting. Emphasis is on problems of reading aloud—both dramatic and non-dramatic material. (3 cred.; all; no prereq.; III MTWThF; 306WeH.) Mrs. Graves
37. *Social Trends and Problems.* A study and analysis of major social trends which are affecting and changing American life. Illustrations of social change and interaction in such influences as culture, conflict, religion, economic changes, population trends, and family status are considered, with special references to the state and local community. (5 cred.; all; no prereq.; I-II MTWThF; 218P.) Mr. Goff
38. *General Geography.* This course introduces students to the field of geography which is concerned with the description and interpretation of both natural and cultural (man-made) landscapes. Special attention is given to climate, landforms, and soils as they affect the economic activities of man, throughout the world as well as locally. The importance of map study is also stressed. (5 cred.; all; no prereq.; I-II MTWThF; 160TNL.) Mr. Jennings
39. *General Anthropology.* The study of man in relation to his physical characteristics, his origin and geographical distribution, and the classification and relationship of races. Man as a social and cultural being, and a comparison of languages, culture patterns, and the historical processes by which they have been developed and modified. (3 cred.; all; no prereq.; V MTWThF; 160TNL.) Mr. Winchester
- 40A. *Introduction to Philosophy.* This course is designed to aid students in working out an intelligent view of life with which to meet the problems presented by the world of modern science and modern society. Topics included in the reading and class dis-

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

- cussion touch on such questions as the function of philosophy, the nature and existence of God, the problem of knowledge, "natural rights," man as a social and political being. (3 cred.; all; no prereq.; II MTWThF; 2P.) Mr. Ahlen
- 42A. Human Development and Personal Adjustment. Presents a general outline of human development by surveying physical growth, learning, and development of motor, linguistic, intellectual, and social skills, emotional life and adjustment. Deals with the individual's effective adjustment to social environment and pressures, the origin and nature of attitudes and complexes, and the psychology of social conflict. (6 cred.; all; no prereq.; VI-VII MTWThF; 206WeH.) Mr. Martin
- 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.; III MTWThF; 101WeH.) Mr. McCune
- 45A. United States in World Civilization (to 1865). Throughout this course the emphasis is on probing into the past in order to throw light on the present. National origins and contributions of our culture are studied, and the development of current economic, political, and social patterns of thought and action is traced, with special emphasis on the significance of change. (3 cred.; all; no prereq.; V MTWThF; 101WeH.) Mr. deVeau
- 45B. American Economic and Social Development. This course involves a study of the development of American economic and social institutions from colonial times to the present, with emphasis on the forces that have created our contemporary economic and social structure and on man's attempts to find solutions to the problems that have arisen. (3 cred.; all; no prereq.; I MTWThF; 101WeH.) Mr. deVeau

SECOND TERM

- 7C. Physical Science: The Nature of Chemistry. The fundamental principles of both inorganic and organic chemistry are studied. The principle of conservation of matter is brought out through the balancing of simple chemical equations and the calculation of reacting weights. Examples are chosen largely from common reactions of daily life, such as those involving acids, bases, and salts. Lecture table experiments demonstrate the principles discussed. (5 cred.; all; no prereq.; I-II MTWThF; 133Ph.) Mr. Harris
- 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; 201WeH.) Miss Yakaitis
12. Nature Study. The biology and geology of the local region are emphasized through lectures and field trips. The student observes the animal and plant life of streams, fields, and woods. He learns of the relationship between organisms and their environment. Fossils, animals, and plants are collected and studied. (3 cred.; all; no prereq.; VI-VII MWF and additional hrs. ar.; 3MNH.) Miss Yakaitis
- 23A. †† Art Laboratory. (See first term for description.) (3 cred.; all; no prereq.; I-II MTWThF; 301WeH.) Mr. Hulse
- 23B. †† Introduction to Commercial Art. An art laboratory for students who are interested in commercial art, and who have had no previous experience in that field. The student is given an introduction into problems of commercial art by work in design, drawing, and lettering. (3 cred.; all; no prereq.; III-IV MTWThF; 301WeH.) Mr. Hulse

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

- 24B.†† Music Today. A continuation of 24A, although students may take 24B without having had 24A. (2 cred.; all; no prereq.; VI MTWTh; 202WeH.) Mrs. Yohe
- 30C. Literature Today: Themes in Current Literature. Three or four books of fiction, drama, or non-fiction are studied intensively, both as interpretations of life and society and as specimens of literature. Each is a representative book by a prominent present-day author, and is used as a basis for comparison with other authors who have dealt with similar themes or used similar techniques. (3 cred.; all; no prereq.; III MTWThF; 206WeH.) Miss Draxten
- 31B. Writing Laboratory: Organization and Writing. (See first term for description.) (3 cred.; all; prereq. 31A; V-VI MWF; 302WeH.) Miss Draxten
- 31D. Writing Laboratory: Business Writing. (See first term for description.) (3 cred.; all; prereq. 31A; III-IV MWF; 302WeH.) Miss Sheldon
- 32C.†† Speech Laboratory: Speech Organization. Emphasis is placed on methods of organizing materials for the effective oral communication of ideas. (3 cred.; all; no prereq.; II MTWThF; 306WeH.) Mr. Newgord
- 33B.†† Speech Studio. A continuation of microphone technique studies begun in 33A. Students may register for 33B, however, without having taken 33A. (3 cred.; all; no prereq.; IV MTWThF; 306WeH.) Mr. Newgord
37. Social Trends and Problems. (See first term for description.) (5 cred.; all; no prereq.; I-II MTWThF; 101WeH.) Mr. Goff
- 40B. Straight and Crooked Thinking. In contemporary life everyone is faced with practical problems that require straight thinking; he is also called upon to determine the value of a multitude of conflicting arguments. This course is concerned with an analysis of common errors and fallacies in thinking and the study of valid methods for drawing conclusions from evidence. (3 cred.; all; no prereq.; III MTWThF; 201WeH.) Mr. Ahlen
- 44B. Current History. (See first term for description.) A student may take 44B both terms for credit. (3 cred.; all; no prereq.; III MTWThF; 101WeH.) Mr. deVeau
- 45A. United States in World Civilization (Since 1865). (See first term for description.) (3 cred.; all; no prereq.; V MTWThF; 101WeH.) Mr. deVeau

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

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The Bulletin of the
UNIVERSITY of MINNESOTA

Biological Station Summer Session at Lake Itasca
Douglas Lodge, Minnesota

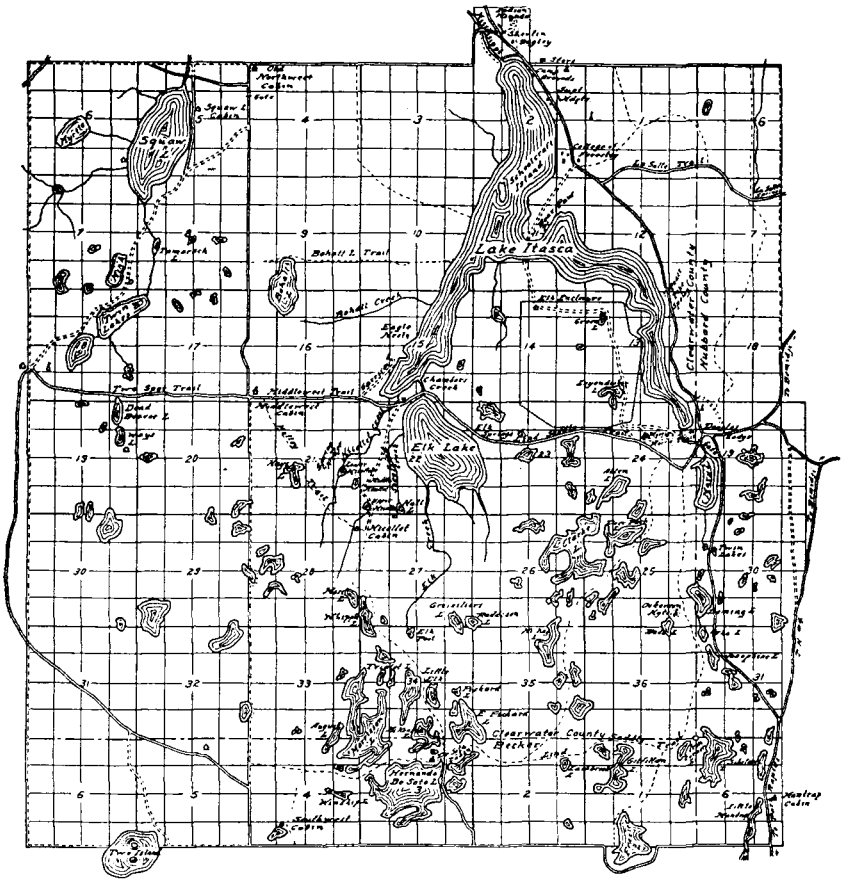
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Map of Itasca State Park

GENERAL INFORMATION

The Lake Itasca Forestry and Biological Station was established in 1908 to provide a summer camp for the instruction of forestry students. In 1935 these facilities were made available to interested students and teachers of biological subjects during the second term of the University's Summer Session. Since then there has been an increasing interest in this activity. Because of the rich and varied flora and fauna of the region, the station provides a most suitable locality for the study of midwestern biological problems. Probably no other area in this region is better suited to the location of a field station of terrestrial and fresh-water biology.

Location and Opportunities for Biological Work

Coniferous and hardwood forests merging into prairies, sand dunes, preglacial lake beds, glaciated and unglaciated areas, thousands of fresh-water lakes of all sizes and types, and swamps from the heavily forested types to open grass and muskeg, all combine to give Minnesota a highly diversified flora and fauna. Most of these features except the unglaciated areas are within easy driving distance of the station.

The Biological Station of the University of Minnesota is situated on the east shore of Lake Itasca in Itasca State Park, an area of great historical interest. The source of the Mississippi River is only a mile away. The normal points of entry to Itasca State Park by rail are Park Rapids and Bemidji, some twenty-five miles away. During the Summer Session, a Greyhound Bus Line from the Twin Cities reaches Douglas Lodge on the



Students Work on Individual Problems in Ecology

south end of Lake Itasca, four miles from the Biological Station. Itasca State Park, one of Minnesota's more primitive areas, is seven miles square and covers an area of approximately 32,000 acres. The numerous lakes of all sizes have an area of about 5,000 acres. Lake Itasca, the largest in the park, is 1,460 feet above sea level. Only a short distance away is a continental divide with an elevation of 1,670 feet.

The wooded shores of the lakes, virgin forests, the dense swamps and open bogs, beaver dams, eagle nests, turkey vulture roosts, pre-



View of White Cedar Swamp

historic Indian mounds, and other features of interest are accessible over well-marked trails. White, red, and jack pine, white and black spruce, balsam, larch, and white cedar are found in pure and mixed stands of all age classes. The hardwood forests are characterized by such trees as hard and soft maple, white and yellow birch, large- and small-toothed aspen, balm of Gilead, basswood, oaks, elms and various other species. The variety of forest types and age classes brings about a corresponding variation in the subordinate vegetation. A state forest adjoining the park affords an excellent opportunity to study the ecology of the various floristic and faunistic successions characteristic of cut-over and burned-over lands. The Chippewa National Forest is only twenty miles to the east. This is one of the oldest and best-developed National Forests in the United States. About thirty miles to the west is the old Lake Agassiz basin with its famous Red River Valley wheat lands. Just north of Bemidji lies the Red Lake Indian Reservation. Upper and lower Red



Field Collections Are Studied in the Limnology Laboratory

Lake together make one of the largest bodies of fresh water, excepting the Great Lakes, within the boundaries of the United States. The Chippewa Indians operate an extensive fishing industry and maintain a hatchery in Red Lake. The coniferous and hardwood forests adjacent supply timber for the tribe's sawmill on a sustained yield basis. All these features are readily accessible from the Biological Station.

The wealth of flora and fauna makes possible the study of systematic botany, zoology, entomology, parasitology, and mycology through living specimens collected by the student. The abundance of fish, birds, and wild animals in their native habitat offers an unusual laboratory for studying ecology, entomology, parasitology, and wildlife management and conservation.

Instruction

The Biological Station was established for the advancement of fundamental knowledge of terrestrial and fresh-water biology. To this end it promotes and provides opportunity for instruction and research in the various fields of biology. Through these activities it hopes to add to the knowledge of the flora and fauna of the Lake States and mid-western regions of similar geological history.

This station is conducted cooperatively by various departments of the College of Science, Literature, and the Arts and the College of Agri-



A Scene from the Shore of the Station

culture, Forestry, and Home Economics of the University of Minnesota through the sponsorship of the Summer Session.

It offers elementary and advanced courses in the fields of biology under competent instructors. Opportunities are also offered for independent study and research by more advanced students.

The Biological Station offers unusual educational opportunities to various groups of students.

1. To graduate students in the field of biology it offers an excellent field laboratory for research.



Virgin Red Pine with an Understory of Balsam Fir
Note the deer browse-line on the balsam



Students Reach Inaccessible Places by Light and Safe Boats

2. To students of wildlife management it offers an opportunity for life history and ecological studies.

3. To high school teachers it offers an opportunity for advanced study and improvement. It will provide the necessary training to enable the teacher to take biology classes to the field.

4. To undergraduate students in all fields of biology it offers an opportunity for advanced instruction. For those who are not certain in which field their major interest lies it can serve as a help in orienting them.

5. To students in agriculture and home economics who contemplate a career in extension work it offers an opportunity for training in conservation and nature study. These subjects are important phases of all rural extension work.

6. To teachers of botany, zoology and all phases of biology in all schools and colleges it offers an opportunity for improvement through independent research.

Courses consist of field trips and indoor laboratory work. An effort is made to use the field rather than the laboratory as much as is consistent with good instruction. The scholastic standards of the University are maintained at the station. University credit is given for work satisfactorily completed in the courses registered.

Facilities for Instruction and Research

The buildings and equipment of the station, while not elaborate, are adequate for all purposes. Its dormitories and laboratories are located in an attractive forest setting on the shores of Lake Itasca. The main Forestry Lodge, with its assembly room and fireplace, is used for recreation and evening meetings.

Two new one-story laboratory buildings were constructed in 1946. These buildings provide laboratory space for four subjects. They are well

lighted and provided with the necessary tables and chairs, a fine herbarium of the region, insect and fungus collections, bird skins and small mammal skins for study.

The new limnology laboratory is a two-story structure located on the lake shore completely equipped with all facilities. The entire camp is electrically lighted with 110-volt AC.

Since the major part of the instruction is in the field, the laboratory equipment is not elaborate. It is, however, adequate for all ordinary purposes, and arrangements can be made to have special equipment available if the needs can be anticipated. The normal equipment includes a library, all necessary compound and dissecting microscopes, binoculars, collecting equipment, various types of nets, row boats, launches, and a supply of accessories and minor equipment essential for adequate instruction and research.

Arrangements can be made to provide laboratory space for advanced students and research workers. It is desirable to make such arrangements before coming to the station.

Board and Lodging

The Forestry Lodge is provided with roomy screened-in porches on both the first and second floors. If needed, this building can accommodate from fifty to one hundred men students. Four eight-man cabins were con-



Ecology Students on a Field Trip

structed for men students in 1947. It is expected that two more will be completed for the 1948 session. A central bath house for the men is expected to be ready for the 1948 session. Five cottages, each accommodating eight students, are assigned for women's dormitories. The women's cottages are equipped with running water and toilet facilities. Students are asked to bring with them their own bed linen, two or three double wool blankets, a pillow, towels, and toilet articles. The following personal equipment is essential: suitable shoes or boots for field work, a raincoat, heavy socks, field suit or dress, swimming suit, flashlight, desk lamp,



A Good Catch of Bluegills Provides Laboratory Material

notebooks, pocket field books, pencils, hand lenses, dissecting sets and pins, vial and corks, and the recommended and necessary textbooks. When possible, it is recommended that the student write the instructor to secure information on needed texts and equipment. The station operates a supply store where some standard supplies can be secured. It is difficult to take care of trunks.

Meals are served in a well-equipped log dining hall operated under the direction of the administration of the station in consultation with the officers elected by the attending students. The meals are carefully planned, well balanced, and well prepared by experienced cooks. Fresh meat, vegetables, and fruits are served daily.

It is difficult to indicate what the cost of board will be in these times of rising prices. The cost for the 1947 session was less than \$50 per student. A payment of \$50 to the treasurer of commissary will be required during the first few days of the session. Should the cost exceed this figure, additional payments may be called for; if there is any balance left it will be refunded to the students.

Laundry facilities are limited. Before the war, trucks from near-by towns called for and delivered laundry and dry cleaning. This service had not been resumed in 1947. Students are expected to keep their own quarters clean and orderly.

An infirmary with a part-time registered nurse in attendance is available for the care of minor injuries and ills. Medical attention, when necessary, can be secured from Park Rapids or Bemidji.

About one mile south of the station the State Park maintains a large public camp ground. Students with families may avail themselves of the facilities here which include tenting or trailer space, water, fuel, ice, electricity, shower baths, and a well-developed beach. Some cabins are available here but it is not the policy of the Park Service to rent them for extended periods. There are numerous resorts in the vicinity providing excellent accommodations for families of graduate students and investigators. Arrangements can usually be made for reduced rates for extended stays. It is expected that as soon as building material becomes readily available the station will be able to provide adequate housing for this class of students.

While it is recognized that the main function of the station is to provide an adequate educational program, yet the recreational program is not neglected. There is ample opportunity for swimming, fishing, and boating. There is opportunity for hikes to points of historic interest and scenic beauty. The social events are handled by the students themselves with some guidance.

The camp operates with a minimum of rules and regulations. Cars are permitted but no garage space is provided. Weekend absences from camp and extended field trips must be reported.

Fees and Expenses

The following fees are payable by each registrant on or before July 26:

Tuition fee	\$30.00
Incidental fee	6.00
General deposit fee	2.00
Dormitory and dining hall fee	5.00
Equipment fee	5.00
Total fees	\$48.00

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

The estimated cost of \$98 includes the \$48 registration fee and \$50 for board. It does not include traveling expenses, laundry, and incidental personal expenses.

Tuition and fees are payable at the time of registration on or before July 26. After July 26 the late registration fee will be charged as follows:

Tuesday, July 27	\$2.00
Wednesday, July 28	3.00
Thursday, July 29	4.00
Friday, July 30	5.00

No registration will be accepted after August 1 without approval of the professor in charge and the payment of the \$5 late registration fee.

The courses will begin Monday morning, July 26 and close Saturday, August 28.

Admission and Registration

The courses at the Biological Station are open to all qualified graduate and undergraduate students who have had the usual preliminary courses in biological subjects and to properly qualified high school graduates. Certain courses are especially designed for the teachers of biological subjects in colleges, high schools, and private schools, and others interested in plant and animal life.

Reservation may be completed any time during the months of June and July but not later than July 26. All reservations and inquiries should be directed to the College Office, University Farm, St. Paul 1, Minnesota, and not to the Office of Admissions and Records or individual departments. Registration will be completed on Monday, July 26 at the station.

Applications for registration for graduate students will be handled through the College Office. This office will forward the application to the dean of the Graduate School for approval. The applicant will then be informed of the status of his eligibility for admission to both the Graduate School and the Biological Station.

Consultants have been appointed in the various fields to answer specific inquiries regarding courses. For specific information in the various fields, the following should be consulted:

Zoology	Mr. Samuel Eddy	Department of Zoology, University of Minnesota, Minneapolis 14, Minn.
Entomology and Economic Zoology	Mr. William H. Marshall	Division of Entomology and Economic Zoology, University Farm, St. Paul 1, Minn.
Plant Pathology	Mr. Clyde Christensen	Division of Plant Pathology and Botany, University Farm, St. Paul 1, Minn.
Botany	Mr. A. Orville Dahl	Department of Botany, University of Minnesota, Minneapolis 14, Minn.

Most of the courses are offered on a four-credit basis per session. Each four-credit course will occupy two days a week from 8:00 a.m. to 5:00 p.m. An adequate noon hour is provided.

Two subjects are considered the normal load. Special permission must be secured from the director for a lighter or heavier load. Advanced students may take two subjects and in addition one or two credits of a well-delimited research problem.

For the 1948 session, not more than forty women and sixty men can be accommodated. Priority of reservations will govern admission.

Mail for students registered at this session should be addressed in care of the Biological Station, Douglas Lodge, Minnesota.



Grass Pink
(*Calopogon pulchellus*)



One of the Hundreds of Fleshy Fungi
Available for Study
(*Amanitopsis vaginata*)



Wintergreen
(*Gaultheria procumbens*)

Opportunities are also offered to graduate students to pursue their research problem work under the supervision and guidance of the staff without attending regular classes.

Special arrangements may be made with the director of the station by qualified independent guest investigators for the use of the facilities of the station for research in various fields of terrestrial and fresh-water biology.

The graduate students should note that courses numbered below 100 carry only undergraduate credit.

Courses of Instruction

The courses offered at the station will be given according to the following schedule. It is possible that circumstances may necessitate minor changes.

SCHEDULE OF COURSES

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Bot. 170	Bot. 116	Bot. 8	Bot. 170	Bot. 116	Bot. 8
Ent. 162	Bot. 131	Bot. 112	Ent. 162	Bot. 131	Bot. 112
Pl. Path. 56	Bot. 176	Ent. 76	Pl. Path. 56	Bot. 176	Ent. 76
Zool. 116	Ent. 59	For. 12	Zool. 116	Ent. 59	For. 12
	Ent. 68	Zool. 55		Ent. 68	Zool. 55
	Zool. 143	Zool. 115		Zool. 143	Zool. 115

The schedule for other courses and research problems will be arranged to suit individual needs.



Collecting Specimens for Laboratory Work

COURSES OF INSTRUCTION

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

Second Term of Summer Session

The courses to be given at the Biological Station will begin July 26 and close August 28. Special arrangements will be made for those whose school or other duties make it impossible to remain through the final week of the session.

BOTANY

8. Elements of Field Taxonomy. The identification of common wild flowers, and a general study of the classification and relationship of flowering plants. Field work in forest, swamp, bog, lake and prairie. Texts: Moyle, *Field Key to the Common Non-Woody Flowering Plants and Ferns of Minnesota*; *Gray's New Manual of Botany*. (4 cred.; prereq. Bot. 1, or consent of instructor; WS.) Mr. Buell.
56. Introduction to the Study of Fungi. Same as Plant Pathology 56.
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. bot. or zool. 10 cred., or consent of instructor; WS.) Mr. Tryon.
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. Bot. 8, or consent of instructor; TF.) Mr. Tryon.
131. Field Ecology. The study of the plant communities represented in Itasca Park and vicinity and their dynamic relationships. Also the relationships of the local communities to the vegetation of Minnesota as a whole. Use of modern methods of vegetational analysis and measurement of environmental factors. (4 cred.; prereq. Bot. 50 or 130 or For. 2-3-4; TF.) Mr. Buell.
170. Bryophytes and Pteridophytes. Field and laboratory study of the mosses, liverworts, ferns and fern allies of Minnesota. Texts: Conard, *How To Know the Mosses*; *The Ferns and Fern Allies of Wisconsin* (obtainable from the Department of Botany, University of Wisconsin). (4 cred.; prereq. 10 cred. of biology, or consent of instructor; MTh.) Mr. Evans.
176. 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. of biology, or consent of instructor; TF.) Mr. Evans.
196. Problems in Ecology, Taxonomy, Bryology, or Algology. Advanced studies based on individual field work and research. (Cred. ar.; adv. students with proper qualifications.) Mr. Tryon, Mr. Buell, Mr. Evans.

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.) Mr. Peters.
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 equivalent; TF.) Mr. Marshall.
76. Techniques of Field Biology. A study of available flora and fauna including the methods of collection, preservation, arrangement, and demonstration of illustrative material and effective presentation to classes. Lectures, laboratory, and field work. This course is primarily designed to meet the needs of teachers of biological subjects. Text: Miller and Blaydes, *Methods and Materials for Teaching Biological Sciences*. (4 cred.; prereq. bot. or zool. 10 cred. or consent of instructor; WS.) Mr. Peters.
162. Ecology of Terrestrial Vertebrates. Detailed studies of the ecological relationships of northern Minnesota terrestrial vertebrates. Texts: same as course 68 and Elton, *Animal Ecology*, or Hesse, Allee, and Schmidt, *Ecological Animal Geography*. Field projects, analyses, and lectures. (4 cred.; prereq. Ent. 68 or Zool. 46-47, and Ent. 63 or equiv. and Bot. 20; MTh.) (There will be a "cost basis charge" for mileage of field trips.) Mr. 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.; adv. students with proper qualifications.) Mr. Peters, Mr. Marshall.

FORESTRY

12. Field Dendrology. Trees and shrubs found in the Itasca Park region, with special reference to identification by means of constant characters. (Not open for credit to students in forestry.) Text required: Rosendahl and Butters, *Trees and Shrubs of Minnesota*. (4 cred.; prereq. 10 cred. in bot., or consent of instructor; WS.) Mr. Buell.

PLANT PATHOLOGY AND BOTANY

56. Introduction to the Study of Fungi. The structure, development, and identification of fungi, especially those of economic importance. (3 cred.; jr., sr.; prereq. bot. 9 cred. or instructor's permission; MTh.) Mr. 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. 105-106-107.) Mr. 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.) Mr. Eddy.
- 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 to the Common Animals of Minnesota*; Ward and Whipple, *Fresh-Water Biology*. (4 cred.; prereq. 15 cred. in zool.; WS.) Mr. Eddy.
- 116.‡ Limnology. A study of the conditions of life and the distribution of organisms in lakes of the Itasca region. Text: Welch, *Limnology*. (4 cred.; prereq. 15 cred. in zool.; MTh.) Mr. Eddy.
- 143.‡ Animal Parasites. Parasites of local fauna with special reference to helminths. (4 cred.; prereq. 15 cred. in zool. or consent of instructor; TF.) Mr. Chandler.
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; adv. students.) Mr. Eddy, Mr. Chandler.

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



Aerial View of Northern Portion of Lake Itasca