

The Bulletin of the
UNIVERSITY of MINNESOTA

The Summer Session
Announcement of Courses
1944

First Term June 12 to July 22
Second Term July 24 to August 26

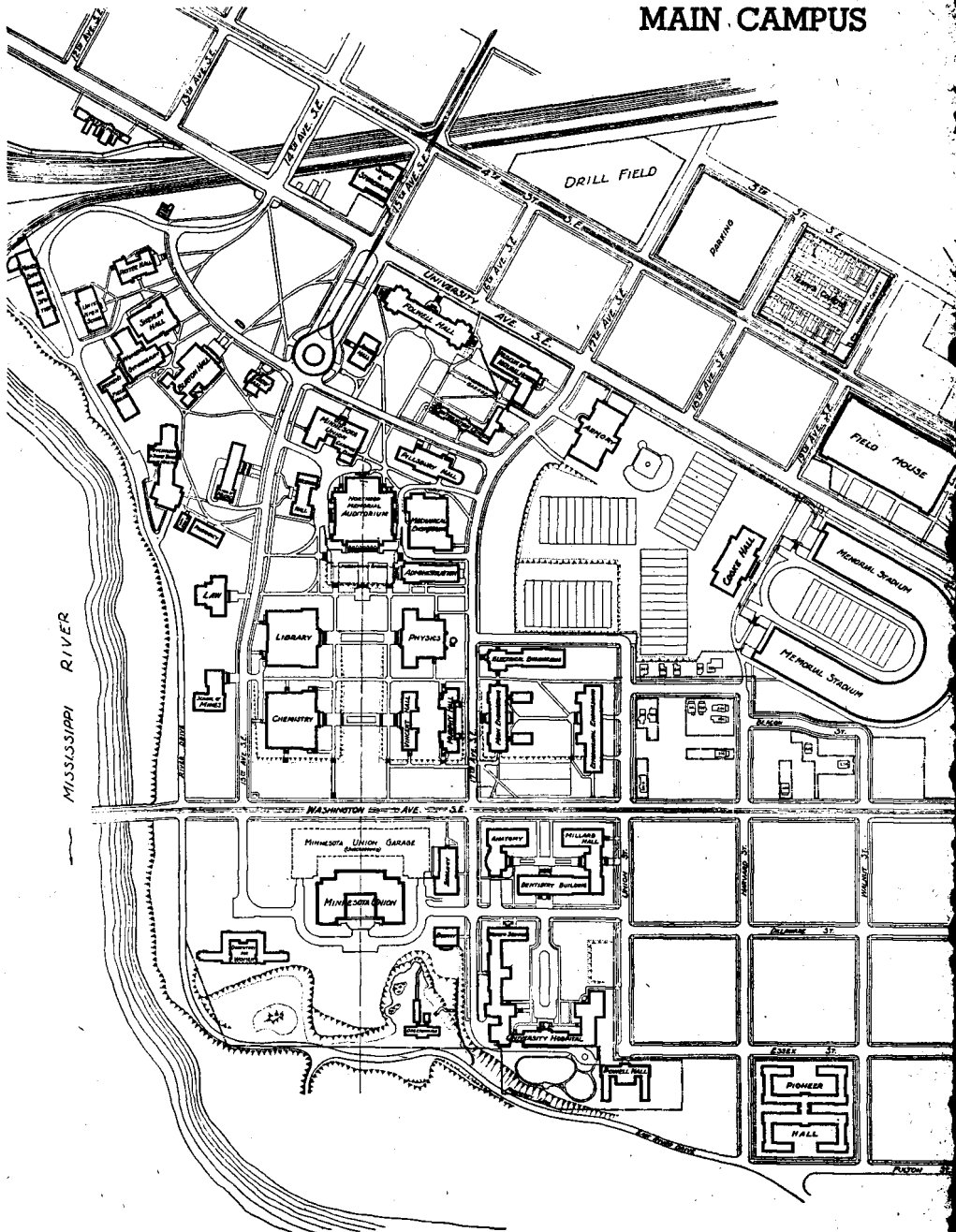


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UNIVERSITY OF MINNESOTA MAIN CAMPUS



MISSISSIPPI RIVER

DRILL FIELD

PARKING

FIELD HOUSE

MEMORIAL STADIUM

MEMORIAL STADIUM

MINNESOTA UNION GARAGE

MINNESOTA UNION

UNIVERSITY

PHYSICS

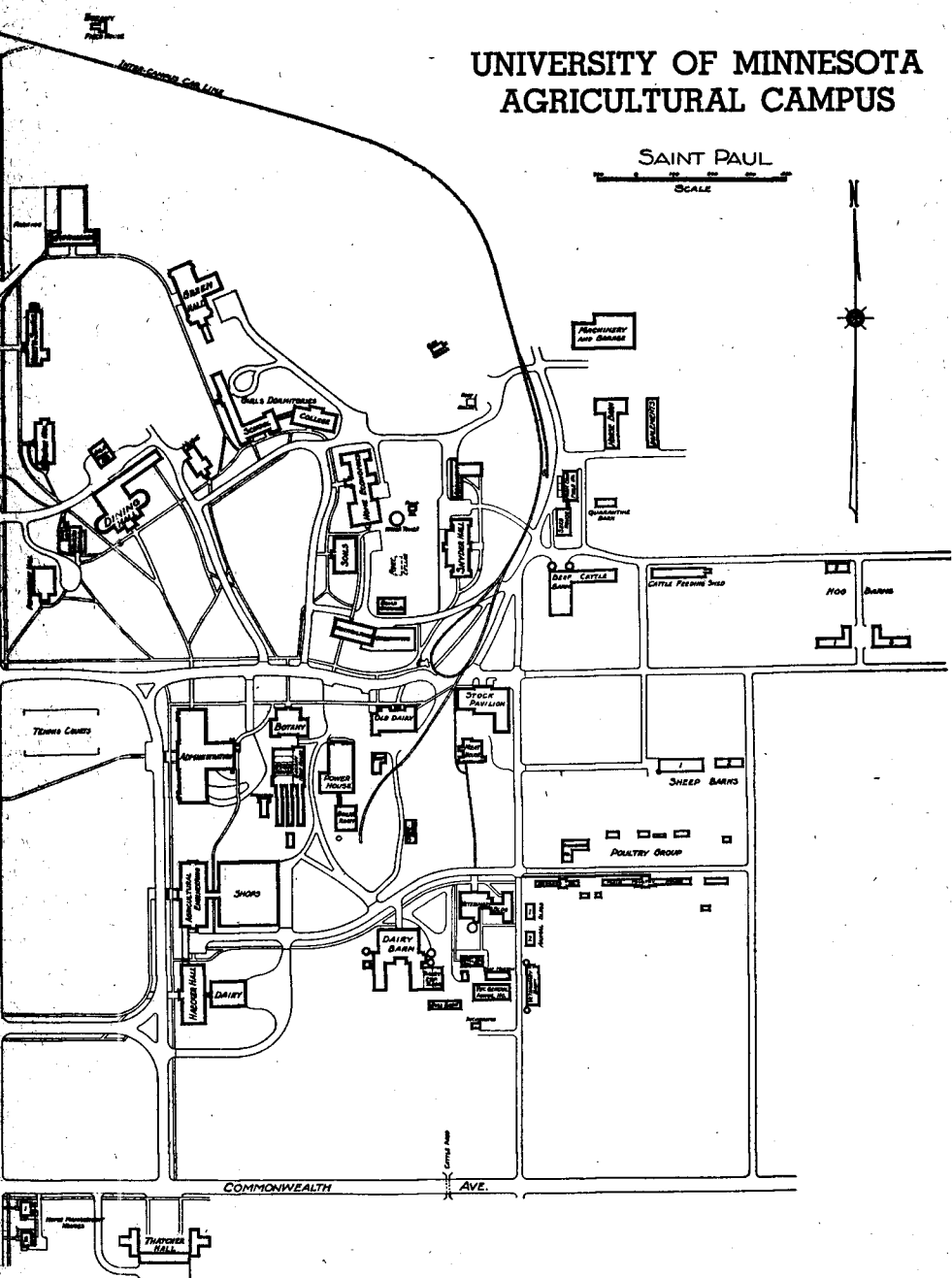
CHEMISTRY

LIBRARY

PIONEER HALL

UNIVERSITY OF MINNESOTA AGRICULTURAL CAMPUS

SAINT PAUL



CALENDAR

SUMMER SESSION, 1944

June 12-13	Monday-Tuesday	Registration, first term
June 14	Wednesday	First term classes begin
July 4	Tuesday	Holiday (July 4, Independence Day)
July 20	Thursday	Commencement convocation
July 22	Saturday	First term closes
July 24	Monday	Registration and payment of fees for second term close at 4:00 p.m.
		Second term classes begin
August 26	Saturday	Second term closes

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BOARD OF REGENTS

The Honorable James F. Bell, Minneapolis - - - - -	1945
The Honorable Daniel C. Gainey, Owatonna - - - - -	1949
The Honorable Richard L. Griggs, Duluth - - - - -	1945
The Honorable George W. Lawson, St. Paul - - - - -	1945
The Honorable Albert J. Lobb, Rochester - - - - -	1947
The Honorable E. E. Novak, New Prague - - - - -	1949
The Honorable A. J. Olson, Renville - - - - -	1949
The Honorable Albert Pfaender, New Ulm - - - - -	1947
The Honorable Ray J. Quinlivan, St. Cloud - - - - -	1945
The Honorable F. J. Rogstad, Detroit Lakes - - - - -	1949
The Honorable Fred B. Snyder, Minneapolis - - - - -	1947
The Honorable Sheldon V. Wood, Minneapolis - - - - -	1947

ADMINISTRATION

- Walter C. Coffey, M.S., LL.D., President
- Malcolm M. Willey, Ph.D., Vice President, Academic Administration
- William T. Middlebrook, B.A., M.C.S., Vice President, Business Administration
- Anne D. Blitz, M.A., LL.D., Dean of Women
- William S. Carlson, Ph.D., Director of Admissions and Records (on leave)
- Laurence R. Lunden, B.A., LL.D., Comptroller
- Errett W. McDiarmid, Ph.D., University Librarian
- True E. Pettengill, M.S., Acting Director of Admissions and Records and Recorder
- Ralph A. Piper, Ed.D., Associate Professor, in charge of Physical Recreation
- Thomas A. H. Teeter, B.S.(C.E.), Director of the Summer Session
- Edmund G. Williamson, Ph.D., Dean of Students

THE SUMMER SESSION

The University of Minnesota will provide a program in the 1944 Summer Session which will enable many undergraduate students to accelerate their training. Provision has been made to admit to certain departments of the College of Science, Literature, and the Arts and the College of Education a limited number of scholastically superior students who have completed the junior year in high school. Two summer terms have been scheduled, and a full quarter of university work may be completed in the combined sessions through a selection of the many courses offered this year. Under the University of Minnesota policy of providing maximum service to the state and its adjoining areas, comprehensive offerings have been arranged for both graduate and undergraduate students in the academic and the professional fields.

The College of Education program will meet the needs of teachers who wish to take work this summer for renewal of teaching certificates. Under emergency conditions a serious teacher shortage has developed, and the College of Education advisers will plan a combination of academic and professional courses for people who are willing to return to teaching to fill the present need.

For the war and postwar periods, the problems of the schools will be particularly acute. The summer courses will assist school workers in handling educational problems under war conditions and in understanding needed developments in education for the postwar period. Special emphasis on reconstruction problems will be given through such courses as Problems of Postwar Domestic Reconstruction (Social Science 101) and Education for Postwar Reconstruction (Education 150). Teachers and administrators who wish to work in the Summer Session on problems of particular importance to their own schools may register in problems courses in the main areas of education. All staff members will schedule office hours for individual conferences and the Curriculum Laboratory will be open in both terms.

Elementary teachers, supervisors, and administrators will find an exceptionally broad program in their fields. Core courses required for the elementary major will be given in both terms of the Summer Session. Problems of supervision and of diagnostic and remedial instruction will be emphasized, in addition to problems of elementary school teaching in the social studies, in reading, and in science. Laboratory practice and observation will be available through the use of the Institute of Child Welfare and the Tuttle Demonstration Elementary School.

Elementary school teachers will be particularly interested in two workshops in the elementary field, offered in the first term of the Summer Session. The first one, Laboratory in Elementary Instructional Practices, will be concerned with problems of rural and village schools. The second workshop has been scheduled by the Institute of Child Welfare for the study of problems in child development. These workshops are described in more detail below under Special Courses.

Increased attention is being given in Minnesota to the training of school administrators with emphasis on their current problems and on their needs for state certification. Graduate advisers will be available for consultation concerning basic and advanced courses for principals and superintendents, and special provision has been made for advisory work in connection with graduate study.

Training courses for school personnel workers will be given in both terms. The University of Minnesota program in this field includes training in the use of tests and other diagnostic materials, the psychology of personality, the procedures of counseling, and clinical practice. Basic guidance courses will be offered for administrators and teachers, as well as for prospective personnel workers.

Courses in philosophy of education and history of education will provide background for the consideration of current educational problems. Courses of interest to many groups also have been arranged in the use of radio in education, in the use of visual aids in teaching, and in health education. In the special fields of art education, music education, and physical education, both undergraduate and graduate courses will be available, with work leading either to the bachelor of science or master of education degree. Courses will be offered in the first term in agricultural education, home economics, and industrial education.

SPECIAL COURSES

WORKSHOP IN ELEMENTARY EDUCATION

In the first term, the Workshop in Elementary Education will be of particular interest to teachers in rural and village schools. The workshop center will be located on the Farm campus, and nearby county schools will be used for observation. This work will be especially valuable for people wishing to renew certificates or obtain special permits, and it may be used toward an elementary education major. The registration in the workshop will be limited to 60, and anyone interested should write at once to Dean W. E. Peik, 204 Burton Hall, University of Minnesota, Minneapolis 14, for permission to register. The Workshop in Elementary Education is listed under Ed.C.I.187su for 9 quarter credits.

WORKSHOP IN HIGHER EDUCATION

During the first term of the Summer Session, the Workshop in Higher Education will make available the resources of the University for staff members from colleges, universities, and teacher training institutions, who wish to study problems in higher education and teacher training. Group discussions and individual conferences will be provided. Only a limited number of students may be accepted in this workshop, and anyone interested should write at once to Professor Ruth Eckert, 301 Eddy Hall, University of Minnesota, Minneapolis 14. (See Ed.C.I.228su.)

WORKSHOP IN CHILDHOOD EDUCATION AND CHILD DEVELOPMENT

In the first term of the Summer Session, the Institute of Child Welfare, with the co-operation of the College of Education, offers a Workshop in Childhood Education and Child Development which will be of special interest to teachers in the primary grades, kindergarten and the nursery school. Students will attend C.W.150su (Ed.C.I.130su.) Problems of Childhood Education, or another approved course for 3 credits. For the remaining 6 credits there will be observations in schools and child care centers, independent study, group work and conferences. Opportunity will be given to follow special interests. This workshop will be of value to people wishing to secure more training to renew certificates or to prepare for work in child care centers. Credits obtained may be used toward an elementary education major. Students may register for this workshop under either Ed.C.I.131su or C.W.186su for 9 quarter credits. Registration is limited to 50. Anyone interested should write to Dr. John E. Anderson, Director, Institute of Child Welfare, 101 Pattee Hall, University of Minnesota, Minneapolis 14, Minnesota.

WORKSHOP IN COMMUNITY AND SCHOOL HEALTH EDUCATION

A Workshop in Community and School Health Education will be offered during the first two weeks of the second term as a joint undertaking of the College of Education and the Department of Preventive Medicine and Public Health. The workshop is intended primarily for teams of workers from the schools and the health department of a local community who will have opportunity to plan together for greater co-ordination of school

and community health education within their communities. Membership on a team will necessarily vary with the community, but may logically consist of superintendents, principals, elementary teachers, school nurses, public health nurses, health officers and teachers of physical education, science, home economics, and the social sciences. The workshop will also be open to qualified students who wish to work independently. Anyone interested should make reservation for the course at least a month in advance of registration by writing to Miss Ruth E. Grout, College of Education, University of Minnesota, Minneapolis 14, or to the Department of Preventive Medicine and Public Health, University of Minnesota. (See Ed.C.I. 127su and P.M.&P.H. 180su.)

SPECIAL PROGRAM FOR PUBLIC HEALTH NURSING SUPERVISORS

Because the position of the supervisor is so vital in the development of public health nursing at this time, the University of Minnesota 1944 Summer Session has been planned for special emphasis upon her preparation. A special sequence of courses has been arranged, designed to provide the supervisor or potential supervisor with a well-balanced program, sharply focused upon immediate problems and techniques of supervision.

WORKSHOP IN INDUSTRIAL HEALTH

The Department of Preventive Medicine and Public Health has planned a Workshop in Industrial Health for the last two weeks of the first term of the Summer Session (July 10-22). The course will carry 3 credits. Particular problems of the participants in relation to health conditions of workers, industrial hazards, and administrative procedures will be discussed. Group discussions, individual conferences, and special seminars will be arranged. Anyone interested should make reservation for the course at least a month in advance of registration by writing to Miss Ruth B. Freeman, Director of the Course in Public Health Nursing, 121 Millard Hall, University of Minnesota, Minneapolis 14. (See P.M.&P.H. 182su.)

SPECIAL COURSE ON THE CONSERVATION OF HEARING

The Departments of Ophthalmology and Otolaryngology and Preventive Medicine and Public Health are offering a one-credit course for public health nurses on the conservation of hearing. This course, available during the first term, will be of special value to school and industrial nurses. (See Ophthalmology and Otolaryngology 135su.)

WORKSHOP IN CLINICAL NURSING

A Workshop in Clinical Nursing open to graduate registered nurses will be conducted June 12-24. The course will carry 3 credits. Students participating in the workshop will choose a clinical field for study. The fields available are surgery, obstetrics, contagion, tuberculosis, introductory nursing, psychiatry, administration of schools of nursing. Each student will work on a project of her own choosing. A series of conferences and discussions in the various fields will be held for the entire group. Individual conferences will be arranged regarding individual work. The workshop will be under the direction of Virginia Henderson. Members of the faculty in the various clinical divisions will assist her.

Prerequisite: Experience as a graduate nurse. Applications for the workshop should be made in advance to the Director of the School of Nursing, University of Minnesota, Minneapolis 14, Minnesota.

NOTE.—An additional Workshop in Administration in Schools of Nursing will be offered later if there is sufficient demand for it.

BIOLOGICAL STATION, SUMMER SESSION

Due to the lack of transportation facilities, the Biological Station at Itasca Park will be discontinued for the duration of the war.

SPECIAL COURSES FOR TEACHERS OF AGRICULTURE

Two three-week summer terms are provided for teachers of agriculture who are employed on the twelve-month basis as teachers. Courses carrying graduate credit are available in technical agriculture and in education. A maximum of 5 credits per term is permitted. The first term of the three-week session begins Monday, June 12, and closes Saturday, July 1.

The same courses will be repeated during the second three-week term which begins Monday, July 3 and closes Saturday, July 22.

INSTITUTE OF SPANISH STUDIES

An Institute of Hispanic American Studies will be held, for the third time, during the first term of the Summer Session. The institute includes a Spanish House where both students and teachers of Spanish live, small classes in conversation and composition, lectures in Spanish on Latin-American culture and literature, Spanish movies, etc. All teachers are native Latin Americans. The courses carry 9 quarter credits. The cost is approximately \$140, including board and room. Those interested should write to the Director of the Summer Session, University of Minnesota, Minneapolis 14, for a special folder describing the program.

INSTITUTE FOR SCHOOL AND PUBLIC LIBRARIANS

The Division of Library Instruction in co-operation with the Summer Session office will hold a three-day institute, June 28, 29, and 30, on the subject, "Modern Methods in Library Service." Book selection aids, administrative methods, community services, public relations, and personnel problems will be among the topics discussed by visiting speakers and members of the staff of the division. Further information may be obtained from the Director, Division of Library Instruction, University of Minnesota, Minneapolis 14.

RED CROSS SURGICAL DRESSING UNIT

A Red Cross Surgical Dressing Unit will be operated during the Summer Session in Coffman Memorial Union. This unit is open to all volunteers who want to devote some of their time to Red Cross work. Volunteers will roll bandages and make surgical dressings needed by the Red Cross for Army and Navy use as well as civilian emergencies.

This unit will operate under volunteer leadership, and participation is on a purely volunteer basis with no credit. The unit is located in Rooms 325-326-327, Coffman Memorial Union.

INSTITUTE OF CHILD WELFARE

The Institute of Child Welfare, an organization for the scientific study of children, for the training of workers in child development, and for disseminating information through a program of parent education, offers a program of graduate and undergraduate courses in both terms.

During the first term the institute operates a nursery school and kindergarten. For information on fees for these schools and a description of the courses offered by the institute, see page 112. Special attention is called to the Workshop in Childhood Education and Child Development offered during the first term which is described on page 8.

DATES OF THE SUMMER SESSION

The Summer Session at the University of Minnesota consists of two terms. The first term of six weeks will begin with registration, Monday and Tuesday, June 12-13. Classes will begin Wednesday, June 14, at 8:30 a.m. The first term will close Saturday, July 22. Registration and payment of fees for the second term will close at 4:00 p.m.,

Monday, July 24. Classes for this term will begin Monday, July 24, at 8:30 a.m., and the Summer Session will be brought to a close on Saturday, August 26.

GENERAL INFORMATION

The University of Minnesota, located midway between the Twin Cities of Minneapolis and St. Paul, yet easily accessible to the vast outdoor playground of northern Minnesota, provides an ideal place to enjoy a profitable summer of study and healthful relaxation.

On its Main campus, situated on the north bank of the Mississippi River in Minneapolis, the University places at the disposal of the Summer Session student the facilities of a great educational institution—its faculty, libraries, laboratories, observatory, and museums—and in addition the recreational resources of its several swimming pools, golf course, 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 University Farm campus in St. Paul, three miles from the Main campus in Minneapolis. The Farm campus offers all of the advantages of the Main campus, being connected with the latter by an inter-campus trolley line which gives regular service free to students enrolled for classes on both campuses. The Como-Harriet interurban line 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.

The Summer Session of the University of Minnesota provides courses (1) for those graduate and undergraduate students, both in the arts and in the professional schools, who wish to reduce their period of residence at the University by accumulating credits during the summer; (2) for superintendents, principals, supervisors, teachers, and other students of professional interests who desire further training in their fields; (3) for persons who seek an opportunity to study for intellectual pleasure; (4) for graduates of accredited high schools who do not meet the special subject-matter requirements to enter some of the colleges and professional schools; (5) for high school graduates and high ability students, both men and women, within a year of high school graduation who wish to become acquainted with the methods of instruction and accelerate their college training preliminary to wartime service.

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, and the weather is usually cooler. The School of Business Administration, the College of Education, and the Departments of English, Mathematics, Physics, Sociology, and Speech offer particularly good programs in the second term.

Students registering in the second term who are teachers and are obliged to return to their schools before the close of the term, may, with the consent of instructors, arrange to complete the work *in absentia*. The granting of such permission is not obligatory on 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.

SUMMER SESSION

INTERCAMPUS CAR

For students who are registered for class work on both the Main campus and the University Farm 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 admission and records at University Farm; to those registered in other colleges, at the university post office in the basement of Coffman Memorial Union, Main campus.

Students who are registered for class on the Main campus and who live in Meredith Hall at University Farm will also be given free transportation. Tickets will be issued by the office of admissions and records, University Farm.

GENERAL OFFICES

The office of the director of the Summer Session is in Room 406 on the fourth floor of the Administration Building on the Main campus. The offices of admissions and records and the bursar are on the first floor of the Administration Building. For the convenience of students registering in agriculture and home economics, branch offices are established on the second floor of the Administration Building, University Farm. Details of procedures to be followed in registering will be given out at these places. 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.

BUREAU OF RECOMMENDATIONS

The Bureau of Recommendations of the College of Education is operative during the Summer Session. Students who have earned 30 quarter credits at the University of Minnesota are eligible for the active services of the bureau. These services consist in recommending candidates and forwarding their confidential credentials to school officials in many parts of the country who have vacancies on their teaching or administrative staffs. Superintendents who are looking for teachers will be given full and reliable information on competent candidates, experienced or inexperienced, if they write to or call at the office of the bureau in Room 208, Burton Hall.

UNIVERSITY LIBRARY

The University Library is open to all students of the Summer Session. The entire University Library system includes about 1,250,000 volumes and many periodicals and pamphlets covering all subjects in the university curriculum.

The largest part of the library is housed in the Library Building on the Main campus. This is one of the largest and best university library buildings in the country. It includes spacious reading rooms and a special floor with seminar, library collections, and discussion rooms for advanced students. The library of the Department of Agriculture, with an excellent collection on agriculture and home economics, is located in the Administration Building at the University Farm. 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. Current information is included, as occasion arises, in the Official Daily Bulletin.

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.

CORRESPONDENCE STUDY COURSES

The Correspondence Study Department of the General Extension Division affords an opportunity to students who come to the University only for the Summer Session to continue their studies during the remainder of the year, and thus accumulate additional credit toward their degrees as well as to secure the training which regular study gives. On the other hand, students who are now pursuing correspondence study courses have a chance in the Summer Session to complete some of their residence work at a time when many of them are free to do so. All those who are interested and who register for the Summer Session are urged to call at the office of the General Extension Division to become acquainted with its work. Full information concerning correspondence study courses may be had at any time by addressing the Correspondence Study Department, General Extension Division, 419 Administration Building, University of Minnesota, Minneapolis 14.

COFFMAN MEMORIAL UNION

Summer Session students may enjoy the facilities of the beautiful Coffman Memorial Union building. This is the University's coeducational social center.

In it are attractive lounges, ballrooms, and dining rooms, as well as a bookstore and a billiard room, a game room, and a bowling alley. Here students will find restful relaxation, tasty but inexpensive meals, or some active recreation. The Union supplements these services with a program of dances, receptions, music hours, and concerts.

All students are members and are urged to make the most of the Union facilities and program.

The University Farm Union, a branch of the Coffman Memorial Union, at University Farm, is open to Summer Session students.

UNIVERSITY POST OFFICE

The university post office, for distribution of mail addressed to the University, is located in the basement of the Coffman Memorial Union on the Main campus. The University Farm post office is in the Administration Building on the Farm 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 year an official daily bulletin is published in the *Minnesota Daily*. In addition to the announcements to students and faculty it contains other information, 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.

LIVING EXPENSES

The living expenses for students at the University are never very high, and this is true especially of the Summer Session. Good accommodations for room may be had from \$12 to \$18 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, 118 Administration Building, 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 and Pioneer Hall.

DORMITORIES FOR MEN

Pioneer Hall

The Navy has taken over Pioneer Hall to house Navy students here on the campus. It is very unlikely that the building will be open to Summer Session students.

DORMITORIES FOR WOMEN

Ada Comstock Hall

Excellent living accommodations are provided in Ada Comstock Hall, a residence hall for women opened in September, 1940. The building, which is modern in every way, faces the Mississippi River and is adjacent to the Coffman Memorial Union. It accommodates 493 students.

Sanford Hall has been converted to the use of the Army, and Ada Comstock Hall now is set up with double-decker beds, accommodating two persons in every single, and three persons in every double room. There are no single rooms available.

Reservations should be made as far in advance as possible. Application, accompanied by a deposit of \$2, should be sent direct to Ada Comstock Hall, University of Minnesota. No application will be recorded until a deposit fee of \$2 and a completed lease are received. Checks should be made payable to the University of Minnesota. This deposit will hold the room until the day after the opening of the Summer Session and is applied on the regular dormitory charge. For additional information write to the Director of Comstock Hall, University of Minnesota, Minneapolis 14.

Owing to the exigencies of war, plans for the use of the dormitories are subject to change without notice.

Sanford Hall

The Army has taken over Sanford Hall to house Army students here on the campus. It is very unlikely that the building will be open to Summer Session students.

Meredith Hall, University Farm

Women taking regular work during the first term of the Summer Session, either on the Minneapolis or on the Agricultural campus, may obtain rooms in Meredith Hall, Agricultural campus, providing facilities are available. There is convenient street car service to the Main campus. The dormitory contains a few single rooms; other rooms are intended to accommodate two persons. Necessary bedding and hand towels are furnished.

The rates during the summer are as follows: single rooms, \$2.50 per week; other rooms, \$2.25 per week per occupant.

Applications for rooms, accompanied by a \$2 deposit, should be made to the office of the superintendent, School of Agriculture, University Farm, St. Paul 8.

Assignment of rooms will be made at the time of registration in Meredith Hall. Fee statements may be obtained in Room 205 Administration Building, Agricultural campus, and payment for the first term of the Summer Session must be made to the cashier, at the time of assignment. Dormitories will be open Monday, June 12. They will not be available during the second term.

A cafeteria with reasonable charges is maintained on the Agricultural campus.

For those women who prefer living off the campus there are numerous private residences and sorority houses adjacent to the University.

LIVING ACCOMMODATIONS FOR MARRIED GRADUATE STUDENTS

Thatcher Hall, providing living accommodations for thirty-six married students registered in the Graduate School, is located on the Agricultural campus. There are both one-bedroom and non-bedroom quarters. All quarters include a dinette, kitchenette, in-the-wall bed, and a private bathroom with adjoining built-in wardrobe and closet.

Rooms are 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 Thatcher Hall should communicate with the real estate manager, Room 12 Administration Building, University of Minnesota, Minneapolis 14, regarding application, prices, and other details.

PRIVATE RESIDENCES

The Housing Bureau, Room 118 Administration Building, Main campus, is operated by the University for the purpose of assisting both men and women in the securing of suitable living accommodations. Students may obtain lists of approved houses upon request. The houses on these lists have been inspected by the Students' Health Service on the basis of sanitation, fire hazards, heating facilities, and other qualities that might affect the health and welfare of the student.

For the convenience of students desiring housing facilities in the area near the Agricultural campus, lists of approved houses and other information pertaining to housing may be secured by calling at Room 111 Administration Building, Agricultural campus.

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

ADMISSION AND REGISTRATION

ADMISSION

The courses of the Summer Session are open to all qualified high school graduates. Non-high school graduates and others who do not meet normal requirements for entrance may be considered for admission by examination. Students with previous college work who wish to attend only for the Summer Session and not as candidates for degrees may do so without filing application or credits provided they are in good standing. Such students will be classified as special students for Summer Session only. Anyone who expects to become a candidate for a degree at the University of Minnesota must file an application for admission and a transcript of credits covering high school and previous college work with the director of admissions of the University of Minnesota. Students who have had no previous college work must satisfy admission requirements to attend Summer Session. Persons of maturity (over twenty-four years of age) whose preparation does not meet the entrance requirements may attend as adult special students on approval of the dean of the college or school concerned.

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

REGISTRATION

In order that the short terms may prove of maximum value, and that the work of the courses may not be 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 12, 8:30 a.m. to 4:00 p.m.

Tuesday, June 13, 8:30 a.m. to 4:00 p.m.

For the second term Monday, July 24, 8:30 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 14	\$2.00
Thursday, June 15	3.00
Friday, June 16	4.00
Monday, June 19	5.00

No registrations are allowed for the first term after Monday, June 19, 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 25	\$2.00
Wednesday, July 26	3.00
Thursday, July 27	4.00
Friday, July 28	5.00

No registrations will be accepted for the second term later than Friday, July 28, without the special permission of the dean of the school or college concerned, and the payment of the late registration fee of \$5.

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

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.

Registration for all colleges except the College of Agriculture, Forestry, and Home Economics will be held in the Union ballroom. College of Agriculture, Forestry, and Home Economics students will register at 203d Administration Building, Agricultural campus.

FEES

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

Tuition fee (per term)	\$25.80
Incidental fee† (per term)	5.00
(Incidental fee for students registered first term in the Institute of Technology \$5.15, second term \$5)	
Total fee (per term)	\$30.80
General deposit	\$ 2.00

† An incidental fee of \$5 per term is charged each student (except those registered first term in the Institute of Technology) for which the student receives the privileges of the Coffman Memorial Union, the Health Service, the *Minnesota Daily* including the Official Daily Bulletin, and the university post-office service.

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

Part-time tuition fee (4 credits or less) (per term).....	\$15.80
Incidental fee‡ (per term)	5.00
(Incidental fee for students registered first term in the Institute of Technology \$5.15, second term \$5)	
<hr/>	
Total fee (per term)	\$20.80
General deposit	\$ 2.00

In addition certain courses carry a fee as indicated in the description of those courses. Graduate students who have completed all their graduate work with the exception of their theses will be allowed to register in the Summer Session for *thesis work only* upon the payment of \$5 tuition and \$2 deposit fee.

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

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

For fees for students desiring legal time credit in the Medical School, see page 69.

For fees for students registered for clinical courses in the School of Dentistry, see page 88.

For fees for students registered for music courses, see page 36.

For fees for students registered for nursing courses, see page 70.

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

‡ An incidental fee of \$5 per term is charged each student (except those registered first term in the Institute of Technology) for which the student receives the privileges of the Coffman Memorial Union, the Health Service, the *Minnesota Daily* including the Official Daily Bulletin, and the university post-office service.

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 Student's 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.

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 by 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 under the following conditions:

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

2. **Recommendation of the faculty.**

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

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

5. **Attendance at commencement.**—All candidates for degrees are required to be present at commencement exercises provided the candidate's work is completed at the end of a quarter when such exercises are held. Commencement exercises for first term Summer Session candidates will be held Thursday, July 20, 1944. Students completing their work for a degree in the second term of the Summer Session will receive the degree without attending formal commencement exercises, or they may receive the degree at the fall quarter commencement exercises in December.

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.

SUMMER RECREATION

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

As a gateway to the countless resorts on Minnesota's famed 10,000 lakes, the Twin Cities also provide an advantage for the summer visitor seldom found anywhere else. Many students will find it convenient and pleasant to spend week ends at some of these resorts and centers for recreation.

Informal social evenings.—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. The University Art Laboratory is open evenings for those who wish to work on art projects of their own choice under informal instruction.

Excursions.—A number of excursions to points of historical, industrial, educational, or purely recreational interest in the vicinity of the Twin Cities also are made each summer. These tours are usually arranged for Monday, Friday, and Saturday afternoons, with the cost only the necessary street car or bus fare.

Physical activities.—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 Field, an eighteen-hole golf course; three gymnasiums containing five swimming pools—Cooke Hall for men, Norris Gymnasium for Women, and the Farm Gymnasium; Northrop Field which contains facilities for baseball, track, diamond ball; 21 tennis courts, and space for minor sports.

A program of tennis, golf, horseshoe, and badminton tournaments; a baseball and diamond ball schedule; as well as other competitive sports are arranged each summer. All of these facilities are available for both men and women and most of them with no extra charge except for towel service.

Tennis and golf tickets.—The use of the tennis courts is restricted to those holding tickets. Such tickets will be issued to regularly enrolled students of the Summer Session and members of the staff, upon payment of a fee of \$1 for 15 hours of play. Golf tickets are issued in the same manner without charge, but a greens fee of 50 cents is charged for a single round, or ten rounds for \$4.50. Before 10:30 a.m., except Saturday, Sunday, or holidays, and after 5:00 p.m. the charge will be 35 cents per round. Application should be made to the Athletic Department, Cooke Hall.

SPECIAL FEATURES

Lectures and convocations.—One of the principal features of the Summer Session programs is the series of weekly convocation addresses by speakers of more than usual prominence. Scientists, literary figures, artists, observers of national and international affairs are among those who visit the campus to address these Summer Session audiences. In addition, an almost daily series of lectures by faculty members and invited guests adds to this feature of the program.

Dramatics.—Performances of legitimate drama also 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. For these offerings the very best of stage equipment and facilities is provided.

Newsreels.—Another feature which has proved increasingly popular is the Newsreel Theater under the direction of the Visual Education Department of the University. Motion pictures of current events, travel pictures, and educational films of various kinds from the subject matter of the theater.

SUMMER EMPLOYMENT

Students are advised not to engage in extra work during the summer; a full program of study during the warm weather should, with reasonable recreation, be a sufficiently heavy load. But for the benefit of those who feel compelled to aid themselves financially while in attendance, the service of the University Employment Bureau is always available. Many students are aided by this bureau which is located in Room 17, Administration Building.

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.

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

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

CLASS HOUR SCHEDULE

	Main Campus	University Farm
I Hour	8:30- 9:20	8:15- 9:05
II Hour	9:30-10:20	9:15-10:05
III Hour	10:30-11:20	10:15-11:05
IV Hour	11:30-12:20	11:15-12:05
V Hour	12:30- 1:20	12:15- 1:05
VI Hour	1:30- 2:20	1:30- 2:20
VII Hour	2:30- 3:20	2:30- 3:20
VIII Hour	3:30- 4:20	3:30- 4:20
IX Hour	4:30- 5:20	4:30- 5:20

Convocation, IV hour, Thursday

(See Official Daily Bulletin for announcements)

KEY TO ABBREVIATIONS USED FOR BUILDINGS

Main Campus Buildings

A, Armory	MeS, Medical Sciences Bldg.
Adm, Administration Bldg.	MEx, Mines Experiment Station
AH, Appleby Hall	MGH, Minneapolis General Hospital
Bo, Botany Bldg.	MH, Millard Hall
BoG, Botany Greenhouse	MNH, Museum of Natural History
Bu, Burton Hall	Mu, Music Bldg.
C, Chemistry Bldg.	MurH, William J. Murphy Hall
CCS, Center for Continuation Study	NGW, Norris Gymnasium for Women
CH, Cooke Hall	NMA, Northrop Memorial Auditorium
CI, Cancer Institute	O, Observatory
CMU, Coffman Memorial Union	OSL, Oak Street Laboratories
CoH, Ada Comstock Hall	P, Pillsbury Hall
CWI, Child Welfare Institute	Ph, Physics Bldg.
E, Main Engineering Bldg.	PhmG, Pharmacy Greenhouse
EdH, Eddy Hall	PiH, Pioneer Hall
EE, Electrical Engineering Bldg.	PoH, Louise M. Powell Hall for nurses
EH, Eustis Hospital	Psy, Psychology Bldg.
EMH, Elliot Memorial Hospital	Pt, Pattee Hall
Ex, Experimental Engineering Bldg.	S, Stadium
F, Folwell Hall	SaH, Sanford Hall
FdH, Field House	SBH, State Board of Health Bldg.
G, Greenhouse	ShH, Shevlin Hall
HL, Hydraulics Laboratory (Hennepin Island)	TM, Todd Memorial Hospital
HS, Health Service	UD, University Dispensary
IA, Institute of Anatomy	UHS, University High School
J, Jones Hall	USS-M, USS "Minnesota"
L, Law Bldg.	VH, Vincent Hall
Lib, Library Bldg.	WeH, Westbrook Hall
ME, Mechanical Engineering Bldg.	WuH, Wulling Hall
	Z, Zoology Bldg.

University Farm Buildings

Ad, Administration Bldg.	LsPav, Livestock Pavilion
Ag, Agronomy Bldg.	MB, Music Bldg.
AgBot, Agricutural Botany	OD, Old Dairy Hall
En, Engineering Bldg.	PP, Plant Pathology and Botany
GH, Green Hall	SnH, Snyder Hall
HE, Home Economics Bldg.	So, Soils Bldg.
HH, Haecker Hall	St, Stock Pavilion
Hr, Horticulture	Ve, Veterinary
HS, Health Service	

REQUESTS FOR INFORMATION

Correspondence with reference to the Summer Session and requests for circulars and additional information may be addressed to the Director of the Summer Session or to the Director of Admissions and Records, University of Minnesota, Minneapolis 14, Minnesota.

GRADUATE SCHOOL

The Graduate School gathers into a single organization and unites for the purpose of administration all the activities of the University in all its schools and colleges in so far as they relate to advanced instruction offered for the second or higher degrees, namely, master of arts, master of science, electrical engineer, mechanical engineer, civil engineer, chemical engineer, and doctor of philosophy.

The privileges of the Graduate School are in general open to all who have received Bachelor's degrees from recognized colleges and universities, whose undergraduate scholastic records are satisfactory, and who are acceptable for work in their chosen major fields. An applicant of satisfactory scholastic record whose Bachelor's degree was granted by an institution on the list of colleges and universities approved by the Association of American Universities will be admitted, with the approval of the major department concerned, for graduate work involving a major in that department. *Students who do not hold a degree from the University of Minnesota must present a transcript in duplicate of their undergraduate work.*

The scholastic records of applicants from institutions other than those on the approved list of the Association of American Universities will be reviewed and the applicant may be admitted, with or without conditions. Such conditions as may be found necessary will be determined in each case by the dean and the department of the student's proposed major. If more than six additional prerequisite credits must be earned, the applicant may be asked to register as an adult special student in the appropriate undergraduate college.

An applicant who does not designate a major may be admitted to take work for which he is qualified, but if at a subsequent time he chooses a major he must meet the requirements of that department for acceptance to do major work.

An applicant whose scholastic record and qualifications are unsatisfactory will be refused admission to the Graduate School, but may be advised to register for a probationary period as an adult special student in the appropriate undergraduate college. Such an adult special student must complete successfully one quarter's work in courses acceptable for credit by the Graduate School before being permitted to transfer his registration to the Graduate School. Upon the successful completion of this probationary quarter the student may petition to transfer all work of graduate quality taken while registered as an adult special student to the records of the Graduate School. Residence credit in the Graduate School will be granted with such transferred credits.

College graduates who simply desire to take additional work of undergraduate character without a view to ultimate preparation for an advanced degree should not apply for admission to the Graduate School but should register as special students in the college giving the work.

Students must make application for admission at least two weeks before the opening of the Summer Session which they expect to attend in order to avoid delay 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, and should be sent to the dean of the Graduate School at least two weeks before matriculation.

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 can-

didacy 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 may be submitted after the first Summer Session in residence and must be completed and approved before the Summer Session (or quarter) in which the student expects to receive the degree.

The completed application must be accompanied by a complete program of work to be offered for the degree, including the proposed thesis title in the case of Plan A. 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. The *program*, including in the case of Plan A the thesis title, will be reviewed by the appropriate group committee.

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, 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 three weeks before the end of the session in which they take the degree (first term: Thursday, June 29, 1944, second term: Saturday, July 29, 1944).

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, and not more than 27, credit hours should be in a single field of concentration. 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

SUMMER SESSION

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 and the supplement to the Graduate School 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.

Recd. 2/14/46

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

GENERAL INFORMATION

The administrative officers of this college and their offices are listed below:

T. R. McConnell, Dean of the College.....	219' Adm. Bldg.	✓
J. M. Thomas, Assistant Dean for the Senior College	217 Folwell Hall	
W. H. Bussey, Assistant Dean for the Junior College	106 Folwell Hall	
R. R. Shumway, Assistant Dean for Students' Work	219 Adm. Bldg.	

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 complete bulletin of the College of Science, Literature, and the Arts.

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 23.)

ACCELERATED COURSES TO TRAIN WOMEN FOR WARTIME WORK

The College of Science, Literature, and the Arts has established accelerated programs to fit women in the shortest possible time for positions that will contribute directly or indirectly to the war effort. Six fields of work have already been selected and programs mapped out. They are: *Journalism, Office Work, Physics, Social Work, Statistics, Mechanical Drawing.* Those who are interested in any one of these fields should apply to the office of admissions and records for a descriptive circular and should consult the special advisers in the particular field about what courses to take during the Summer Session.

The Summer Session program has been so constructed as to make possible continuation of any accelerated program begun either in the winter or spring quarter and for the admission of students who wish to enter upon any one of the five.

ANTHROPOLOGY

FIRST TERM

118su.* Indian Civilizations of Mexico and Peru. This course covers the growth of the Maya, Aztec, and Inca cultures in pre-Spanish times. A brief survey of the primitive tribes of Middle and South America will also be included. (3 cred.; soph., jr., sr., grad.; no prereq.; MTWThFS II; 6WeH.) Mr. Wallis.

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

- 119su.* The Contact of Cultures. The influence of one civilization upon another, as exemplified especially in the contacts of Western civilization with more primitive cultures. (3 cred.; soph., jr., sr., grad.; no prereq.; MTWThFS I; 6WeH.) Mr. Wallis.
- 122su.* Problems in Anthropology. Individually directed readings. (Cred. ar.; jr., sr., grad.; prereq. permission of instructor; hrs. and days ar.; 104WeH.) Mr. Wallis.

ART

In view of the present demand for direct vocational training in art, the University is offering an increased number of practical art courses that are open to beginning freshmen in the summer quarter. These may be combined with basic courses in technique, artistic design, and art historical background to afford an adequate introduction to the general theory and practice of art. Courses listed below give credit in the College of Science, Literature, and the Arts and are recommended for the art major. In addition to these regular courses a special art laboratory with equipment for painting, modeling, wood and metal working is open to all students who are interested in working on independent projects without credit (301WeH).

FIRST AND SECOND TERMS

Practical Studio Art

- Arch.DP-Isu.‡ Drawing and Painting, Grade I. (See Arch. DP-Isu, summer quarter.) Mr. Burton.
- Arch.DP-IIsu.‡ Drawing and Painting, Grade II. (See Arch. DP-IIsu, summer quarter.) Mr. Burton.
- Arch.DP-IIIsu.‡ Drawing and Painting, Grade III. (See Arch. DP-IIIsu, summer quarter.) Mr. Burton.
- Arch.DP-IVsu.‡ Drawing and Painting, Grade IV. (See Arch. DP-IVsu, summer quarter.) Mr. Burton.
- Arch.DP-Vsu. Drawing and Painting, Grade V. (See Arch. DP-Vsu, summer quarter.) Mr. Burton.
- Arch.M-Isu.‡ Modeling, Grade I. (See Arch. M-Isu, summer quarter.) Mr. Burton.
- Arch.M-IIsu.‡ Modeling, Grade II. (See Arch. M-IIsu, summer quarter.) Mr. Burton.
- Arch.M-IIIsu.‡ Modeling, Grade III. (See Arch. M-IIIsu, summer quarter.) Mr. Burton.

Students may register for drawing and painting under Miss Lutz, the particular course being determined on the basis of the student's background after consultation with the instructor. (See Art Ed. 4-6-8, 24-26-28, 61-62-63, 124-125 or 126, first term).

- Art Ed.31su. Orientation in Hand Craft Processes. (See Art Ed. 31su, first term.) Miss Berglund.
- Draw.&Des.Geo.41-42-43su. Technical Drawing. (See Draw. & Des. Geo. 41-42-43, first and second terms.) Mr. Doseff.
- Draw.&Des.Geo.81-82-83su. Advanced Drawing. (See Draw. & Des. Geo. 81-82-83, first and second terms.) Mr. Doseff.
- Draw.&Des.Geo.86-87su. Anatomical Drawing. (See Draw. & Des. Geo. 86-87, first and second terms.) Mr. Doseff.

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

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

History and Theory of Art

FIRST TERM

- Fine Arts1su. Introduction to Modern Art. (See Fine Arts 1su, first term.) Mr. Schmeckebier.
 Fine Arts109su. Modern American Art. (See Fine Arts, 109su, first term.) Mr. Schmeckebier.

SECOND TERM

- Fine Arts3su. Introduction to Renaissance and Baroque Art. (See Fine Arts 3su, second term.) Mr. Schmeckebier.
 Fine Arts107su. Modern Mexican Art. (See Fine Arts 107su, second term.) Mr. Schmeckebier.

ASTRONOMY

FIRST TERM

- 11su. Descriptive Astronomy. (5 cred.; all; no prereq.; MTWF III-IV and one evening a week for observation; 150Ph.) Mr. Luyten.
 13su. Stellar and Practical Astronomy. Deals primarily with the observational aspect of astronomy, with the constellations and individual stars. Two lectures a week and as much observing as weather permits. (3 cred.; all; no prereq.; WF 7:30 to 9:00 p.m., approximately the latter half of the time being used in observation; 133Ph.) Mr. Luyten.
 20su.† Celestial Navigation. Fundamentals and astronomical background of navigation. Practice in the actual determination of position on the sea and in the air, using the methods now in use in Army and Navy. (5 cred.; all; no prereq.; MTWF VI-VII and one evening a week for observations; 358Ph.) Mr. Luyten.
 140su. Least Squares. (3 cred.; prereq. 51 or 11, and at least Math. 51; ar.) Mr. Luyten.

SECOND TERM

- 20su.† Celestial Navigation. See 20su, first term. (5 cred.; all; no prereq.; MTWF VI-VII and one evening a week for observations; 358Ph. If there is sufficient demand, this course may also be taught at another hour.) Mr. Luyten.

BOTANY

FIRST TERM

- 4su.† General Botany. A survey lecture and laboratory course on plants and their human interest; characteristics of living matter; fundamental facts of growth, structure, and reproduction of plants; principles underlying inheritances, variation, organic evolution, and relations to environment. (5 cred.; all; no prereq.; lect. MTWThF II, 06Bo; lab. MTWThF VI, VII, 1Bo.) Mr. Huff.
 10su. Minnesota Plant Life. A study of our native wild flowers, trees, shrubs, ferns liverworts, mosses, lichens, and mushrooms. A course for teachers, camp and scout leaders, and others who would know our native plants. Lectures supplemented by laboratory and field work. (3 cred.; all; no prereq.; MTWF III, IV; 4,5,8Bo.) Mr. Huff.

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

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

SECOND TERM

- 5su.‡ General Botany. (See 4su for description.) (5 cred.; prereq. 4su or equiv.; lect. MTWThF I, 06Bo; lab. MTWThF II, III, 1Bo.) Mr. Huff.
- 52su.‡ Elementary Taxonomy. Introduction to the principles and methods of the systematic botany of the higher plants, with extensive practice in identification, and with emphasis upon classification and recognition of the elements of the local flora. (3 cred.; soph.; jr.; sr.; prereq. 1-2-3 or 4-5 or equiv.; lect. MTWF IV, 06Bo.; lab. MTWTh VI, VIII, 1Bo.) Mr. Huff.

CLASSICS

FIRST TERM

Courses for Which No Knowledge of Greek or Latin Is Required

- 42-43su. Greek Mythology. Lectures, textbook work, and illustrative readings, supplemented by occasional stereopticon views. The origin and interpretation of the myth; its relation to literature, art, and religion. (3 cred.; soph., jr., sr.; no prereq.; MTWFS IV and one hr. ar.; 112F.) Mr. Heller.

LATIN

- A-B-Csu. Review in Elementary Latin. Rapid review of the essentials of Latin, intended primarily for those who, because of the emergency, may be called upon to teach Latin and for those who wish to refresh knowledge previously acquired. (3 cred.; soph., jr., sr.; no prereq.; MTWThFS I; 112F.) Mr. Heller.
- 171su.* Independent Reading Course. (3 cred.; jr., sr., grad.; prereq. any two courses between 50 and 100 or six years of Latin; MTWThFS II; 110F.) Mr. Heller.
- 211su.* Graduate Seminar. Opportunity will be offered students to pursue independent research and to undertake or to continue work on theses. (3 cred.; ar.) Mr. Ogle.

ENGLISH

FIRST TERM

LITERATURE

- 22su. Introduction to English Literature. This course carries university credit for the second quarter of English 21-22-23. Dryden, Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding, and Sheridan. (6 cred.; all; prereq. Eng. A-B-C, or Comp. 4-5-6, or exemption from requirement; MTWThF II and 1 hr. ar.; MTWF IV, Th V, and 1 hr. ar.; 322F.) Mr. Hessler.
- 38su. Twentieth-Century Literature. This course carries university credit for the second quarter of English 37-38-39. Readings in British and American literature since the 1890's—poetry and drama. This course is intended as a general introduction to the intelligent reading of literature for students in all colleges, and not particularly for those meaning to specialize in English. (3 cred.; freshmen qualified to take Eng. A-B-C, soph., jr., sr.; MTWF IV, Th V, and 1 hr. ar.; 301F.) Ar.
- 55su. Shakespeare. Reading for class discussion of *A Midsummer Night's Dream*, *The Merchant of Venice*, *Much Ado About Nothing*, *Twelfth Night*, and *The Tempest*. Assignment of other comedies for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq.‡; MTWThF I and 1 hr. ar.; 204F.) Ar.

‡ English A-B-C, or Composition 4-5-6 and 6 additional credits, or 10 credits in English 21-22-23

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

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

- 56su. Shakespeare. A continuation of 55su. Reading for class discussion of *Henry IV, 1 and 2, Julius Caesar, Hamlet, Macbeth*. Assignment of other historical plays for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq.†; MTWThF IV, Th V, and 1 hr. ar.; 206F.) Ar.
- 74su. American Literature. This course carries university credit for the second quarter of Eng. 73-74. (3 cred.; jr., sr.; prereq.†; MTWThF II and 1 hr. ar.; 303F.) Mr. McDowell.
- 75su. Chaucer. Reading of tales from the Canterbury collection, with introduction dealing with the grammar and literary forms of fourteenth-century English. (3 cred.; jr., sr.; prereq.†; MTWThF III and 1 hr. ar.; 205F.) Ar.
- 106su. Eighteenth-Century Poetry. From Thomson to Chatterton, with special reference to the rise of romanticism. This course carries university credit for the second quarter of English 105-106. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF II and 1 hr. ar.; 204F.) Mr. Hillhouse.
- 109su. Romantic Poets of the Nineteenth Century. (Wordsworth, Scott, Coleridge.) This course carries university credit for the first quarter of Eng. 109-110. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF III and 1 hr. ar.; 305F.) Mr. Robbins.
- 113su. American Short Story. A history of the short story in the United States from Washington Irving to the present day. (3 cred.; jr., sr., grad.; prereq. 73-74; MTWThF I and 1 hr. ar.; 303F.) Mr. McDowell.
- 119su. Victorian Prose. The more important prose writers of the Victorian period including Carlyle, Newman, Ruskin, Arnold, Mill, and Huxley. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWF IV, Th V, and 1 hr. ar.; 204F.) Mr. Robbins.
- 121su. The Interpretation of Poetry. The study, through the reading of many examples, of the relation between technique and expression in poetry. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF I and 1 hr. ar.; 311½F.) Mr. Warren.
- 129su. Modern Drama. Contemporary drama from 1870 to the present. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWF IV, Th V, and 1 hr. ar.; 305F.) Mr. Hillhouse.

COMPOSITION

- 4su. Freshman Composition. Practical training in the art of writing; the principles of structure, and analysis of specimens of good prose. This course carries university credit for the first quarter of Comp. 4-5-6. (3 cred.; all; prereq. placement test; Sec. 1, MTWThF I and 1 hr. ar.; 306F, ar.; Sec. 2, MTWThF II and 1 hr. ar.; 305F, ar.; Sec. 3, MTWThF III and 1 hr. ar.; 311½F, ar.)
- 5su. Freshman Composition. A continuation of Composition 4. This course carries university credit for the second quarter of Comp. 4-5-6. (3 cred.; all; prereq. Comp. 4; MTWThF III and 1 hr. ar.; 206F.) Ar.
- 6su. Freshman Composition. A continuation of Composition 5. This course carries university credit for the third quarter of Comp. 4-5-6. (3 cred.; all; prereq. Comp. 4-5; MTWThF II and 1 hr. ar.; 205F.) Ar.
- 27su. Advanced Writing. The writing of essays with emphasis on structure and organization. Instruction largely in individual conference. (3 cred.; soph., jr., sr.; prereq. Eng. A-B-C or Comp. 4-5-6 or exemption from requirement; MTWThF I and 1 hr. ar.; 302F.) Ar.
- 28su. Advanced Writing. Informal writing, involving description and narration. Instruction largely in individual conference. (3 cred.; soph., jr., sr.; prereq. Eng. A-B-C or Comp. 4-5-6 or exemption from requirement; MTWThF II and 1 hr. ar.; 304F.) Ar.

† English A-B-C, or Composition 4-5-6 and 6 additional credits, or 10 credits in English 21-22-23.

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102su. Creative Writing. Open to students qualified, in the instructor's opinion, to undertake writing of (mainly) plays, short stories, and novels on the professional level. (3 cred.; sr., grad.; prereq. 9 cred. in Senior College courses in English or composition; MTWThF III and 1 hr. ar.; 304F.) Mr. Warren.

SECOND TERM

LITERATURE

- 56su. Shakespeare. A continuation of 55su. Reading for class discussion of *Henry IV, 1 and 2, Julius Caesar, Hamlet, Macbeth*. Assignment of other historical plays for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq.†; MTWF IV, Th V, and 1 hr. ar.; 305F.) Mr. Robbins.
- 73su. American Literature. This course carries university credit for the first quarter of English 73-74. (3 cred.; jr., sr.; prereq.†; MTWThF III and 1 hr. ar.; 306F.) Mr. Flanagan.
- 110su. Romantic Poets of the Nineteenth Century. (Byron, Shelley, Keats.) This course carries university credit for the second quarter of English 109-110. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF II and 1 hr. ar.; 303F.) Miss Jackson.
- 114su. The Literature of the Middle West. (3 cred.; jr., sr., grad.; prereq. 73-74 or History 20-21-22; MTWThF I and 1 hr. ar.; 303F.) Mr. Flanagan.
- 151su. Recent Poetry. Poetry in England and America since the death of Queen Victoria. The main tradition and tendencies now prevailing. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWF IV, Th V, and 1 hr. ar.; 303F.) Miss Jackson.
- 169su. Browning and Tennyson. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; MTWThF III and 1 hr. ar.; 303F.) Mr. Robbins.

COMPOSITION

- 4su. Freshman Composition. Practical training in the art of writing; the principles of structure, and analysis of specimens of good prose. This course carries university credit for the first quarter of Comp. 4-5-6. (3 cred.; all; prereq. placement test; MTWThF I and 1 hr. ar.; 206F.) Ar.
- 5su. Freshman Composition. A continuation of Composition 4su. This course carries university credit for the second quarter of Comp. 4-5-6. (3 cred.; all; prereq. Comp. 4; Sec. 1, MTWThF I and 1 hr. ar.; 306F, ar.; Sec. 2, MTWThF II and 1 hr. ar.; 305F, ar.; Sec. 3, MTWThF III and 1 hr. ar.; 311½ F, ar.)
- 6su. Freshman Composition. A continuation of Composition 5. This course carries university credit for the third quarter of Comp. 4-5-6. (3 cred.; all; prereq. Comp. 4-5; MTWThF III and 1 hr. ar.; 304F.) Mrs. Phelan.
- 28su. Advanced Writing. Informal writing, involving description and narration. Instruction largely in individual conference. (3 cred.; jr., sr.; prereq. Eng. A-B-C or Comp. 4-5-6 or exemption from requirement; MTWF IV, Th V, and 1 hr. ar.; 304F.) Mrs. Phelan.

FINE ARTS

FIRST TERM

- 1su. Introduction to Modern Art. Introductory course in history and appreciation of art, especially modern painting, sculpture, and architecture. Lectures illustrated with lantern slides. In the study of the various styles, emphasis will be placed upon the art facilities available in the Twin Cities, such as important architectural monu-

† English A-B-C, or Composition 4-5-6 and 6 additional credits, or 10 credits in English 21-22-23.

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ments in St. Paul and Minneapolis, art collections in the Minneapolis Institute of Arts, Walker Art Center, and the St. Paul Art Gallery. Material offered in this course corresponds to that of Fine Arts 1f given during the academic year. (3 cred.; no prereq.; MTWThF II and 1 hr. ar.; 2J.) Mr. Schmeckebeier.

109su. Modern American Art. A course for advanced students of art, history, and contemporary affairs, dealing especially with art in America from 1913 to the present. Emphasis will be placed on the various regional developments, particularly in painting, but the course will include craft movements as well. The lectures will be illustrated with lantern slides throughout. (3 cred.; prereq. 1, 2, 3, or equiv., or consent of the instructor; MTWF IV and 2 hrs. ar.; 2J.) Mr. Schmeckebeier.

SECOND TERM

3su. Introduction to Renaissance and Baroque Art. Continuation of 1su, dealing with painting, architecture, and sculpture of the sixteenth and seventeenth centuries in Europe. Special emphasis on the great artistic personalities of each period: Leonardo da Vinci, Raphael, Michelangelo, El Greco, Rubens, and Rembrandt. Illustrated throughout with lantern slides, and intended for beginning students as well as those who have had 1su. Material corresponds to that offered in Fine Arts 3s during the academic year. (3 cred.; no prereq.; MTWThF II and 1 hr. ar.; 2J.) Mr. Schmeckebeier.

107su. Modern Mexican Art. A course for advanced students of art, history, and contemporary affairs who are particularly interested in Latin-American culture. It traces the development of the contemporary art in Mexico from the Revolution of 1910 to the present time, with particular emphasis on the fresco work of Diego Rivera and Jose Clemente Orozco. The lectures will be illustrated with lantern slides throughout the course. (3 cred.; prereq. 1, 2, 3, or equiv., or consent of the instructor; MTWF IV and 2 hrs. ar.; 2J.) Mr. Schmeckebeier.

GEOGRAPHY

FIRST TERM

41su. Geography of Commercial Production. Types of production and their geographic basis. Emphasis on the production of commodities of commercial significance. (5 cred.; fr., soph., jr., sr.; no prereq.; MTWThF II-III; 103Bu.) Mr. Dicken.

110su. Geography of South America. The environmental basis for population distribution and economic activities in selected type areas. (3 cred.; jr., sr., grad.; prereq. 8 cred.; MTWFS IV and 1 hr. ar.; 103Bu.) Mr. Brown.

120su. Geography of Asia. A study of physical environment, population distribution and economic activities, with special emphasis on Japan, China, and India. (3 cred.; jr., sr., grad.; prereq. 10 cred. or permission of instructor; MTW O-I; 103Bu.) Mr. Davis.

SECOND TERM

11su. Human Geography. A study of the factors of the physical environment and their effect on human activities. Current problems in the use of our natural resources are used as illustrative material. Approximately half of the time is devoted to maps and a study of weather and climate, both of value as a preliminary to military training. (5 cred.; fr., soph., jr., sr.; no prereq.; MTWThF O-I; 103Bu.) Mr. Davis.

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GEOLOGY

FIRST TERM

- 1su. General Geology (Dynamic Processes and Their Results.) A study of minerals, rocks, structures, and earth processes. Lectures supplemented by laboratory work and field excursions. (5 cred.; all; no prereq.; MTWThF I-II; 210P.) Mr. Thiel.
- 170su. Geologic Problems. (3 cred.; jr., sr., grad.; prereq. permission of major adviser.) Mr. Thiel.

NOTE.—For further information, see instructors.

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

GERMAN

FIRST TERM

- 1su. Beginning A. (5 cred.; all; no prereq.; MTWThF I-II, 209½F.) Mr. Meessen.
- 3su. Intermediate German. Equivalent to either German 3 or 4. (5 cred.; prereq. for German 3 is 2 or two years of high school German; prereq. for German 4 is 3; MTWThF I-II; 207F.) Mr. Holske.
- 144su. The Classical Period: Goethe. (3 cred.; sr., grad.; prereq. 121 and 11 cred. above 59.) Mr. Holske.
- 162su. The German Lyric from Heine to Rilke. (3 cred.; sr., grad.; prereq. 68 and 9 cred. above 59; TF III, IV, V; ar.) Mr. Meessen.
- 259su.* Direction of Graduate Work. (Cred. ar.; grad.; hrs. ar.) Mr. Reichardt.

SECOND TERM

- 2su. Beginning B. (5 cred.; all; prereq. 1 or one year of high school German; MTWThF I-II; 209½F.) Mr. Downs.
- 3su. Intermediate German. (See 3su, first term.) Mr. Pfeiffer.
- 259su.* Direction of Graduate Work. (Cred. ar.; grad.; hrs. ar.) Mr. Pfeiffer.

HISTORY

FIRST TERM

- 1su. European Civilization. Part I of freshman survey. (3 cred.; all; no prereq.; MTWThF II; 209Bu.) Mr. Burt.
- 3su. European Civilization. Part III of freshman survey. (3 cred.; all; no prereq.; MTWThF I; 111Bu.) Mr. Wolf.
- 20su. American History to 1844. Part I of sophomore survey. (3 cred.; soph., jr., sr.; no prereq.; MTWThF III; 221Bu.) Mrs. Tyler.
- 21su. American History, 1844-1877. Part II of sophomore survey. (3 cred.; soph., jr., sr.; no prereq.; MTWF IV and 1 hr. ar.; 221Bu.) Mr. Stephenson.
- 54asu. Renaissance: Age of Machiavelli and Leonardo da Vinci. (3 cred.; jr., sr.; no prereq.; MTWThF II; 112Bu.) Mr. Krey.
- 67su. Twentieth Century Europe after 1919. (3 cred.; jr., sr.; no prereq.; MTWThF III; 211Bu.) Mr. Wolf.
- 68su. United States after 1900. (3 cred.; jr., sr.; no prereq.; MTWThF II; 221Bu.) Mr. Stephenson.

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- 95asu. Latin-American History. (3 cred.; jr., sr.; no prereq.; MTWF IV and 1 hr. ar.; 202EdH.) Mrs. Tyler.
 106su. Renaissance. (3 cred.; grad.; see 54asu.) Mr. Krey.
 109asu. Twentieth Century Europe. (3 cred.; grad.; see 67su.) Mr. Wolf.
 126su. Latin-American History. (3 cred.; grad.; see 95asu.) Mrs. Tyler.
 135su. United States since 1900. (3 cred.; grad.; see 68su.) Mr. Stephenson.

SECOND TERM

- 2su. European Civilization. Part II of freshman survey. (3 cred.; all; no prereq.; MTWThF II; 112Bu.) Mr. Anderson.
 22su. American History. Part III of sophomore survey. (3 cred.; soph.; jr., sr.; no prereq.; MTWThF III; 111Bu.) Mr. Osgood.
 58asu. Russian History. Late Empire and Soviet Russia. (3 cred.; jr., sr.; no prereq.; MTWThF III; 112Bu.) Mr. Anderson.
 90su. West in American History. Part I. (3 cred.; jr., sr.; no prereq.; MTWThF II; 209Bu.) Mr. Osgood.
 94su. American Diplomatic History, 1860-1898. (3 cred.; jr., sr.; no prereq.; MTWF IV and 1 hr. ar.; 221Bu.) Mrs. Tyler.
 109asu. Russian History. (3 cred.; grad.; see 58asu.) Mr. Anderson.
 122su. West in American History. (3 cred.; grad.; see 90su.) Mr. Osgood.
 126su. American Diplomatic History. (3 cred.; grad.; see 94su.) Mrs. Tyler.

HUMANITIES

- 4su. Humanities in the Modern World. An introduction to the study of world literature since the first World War. The literature includes biographies and autobiographies, novels and short stories, plays and poems. The authors studied include Freud, Lenin, Capek, Huxley, T. S. Eliot, and others. The background topics include civilization between two wars, the impact of psychoanalysis, pacifism, communism versus fascism, etc. (3 cred.; all; no prereq.; MTWThFS III; 322F.) Mr. Castell.

SCHOOL OF JOURNALISM

Fees.—A 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

- 13su.† Introduction to Reporting. Lectures, practice, and conferences. Practical instruction in news gathering, news writing, and news analysis. The study of news sources and problems of the reporter. Some attention will be given to news presentation. Reports on aspects of specific American newspapers and on selected books dealing with the contemporary newspaper. This course is a basic course for journalism majors but for high school teachers enrolled in the course, assignments are given which relate to their work. (3 cred.; open to adult specials who demonstrate through tests their capacity, and soph., jr., sr.; MTWThF I; 311MurH.) Mr. Gerald.
 68su. Problems in Radio Writing. Practical study and assignments in the various fields of radio writing: radio news, advertising, dramatic scripts, public affairs programs, etc. Study of the radio audience, analyses of audience response. (3 cred.; jr., sr.; prereq. a course in reporting and consent of the instructor; MTWThF II; 302MurH.) Mr. Mickelson.

† This course is acceptable in the accelerated program in Journalism.

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

- 73su. Magazine Writing and Editing. Lectures and conferences. Practice in production of nonfiction articles for periodicals, general and specialized, and 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. (3 cred.; jr., sr.; prereq. 13 or 41 or consent of the instructor; MTWF IV and 1 hr. ar.; 206MurH.) Mr. Gerald.
- 82su. Supervision of School Publications. Practical consideration of problems facing supervisors of junior college, teachers college, and high school newspapers, magazines, yearbooks, with special emphasis on the solution of publication problems in wartime. (3 cred.; jr., sr.; prereq. consent of instructor; MTWThF III; 302MurH.) Mr. Barnhart.
- 112su.* Current Newspaper Problems. Editorial policy and editorial leadership; the presentation of the news of politics, foreign affairs, science, labor, the fine arts, agriculture, crime, and other categories of news that have social significance; technological changes and their impact on the press; newspaper consolidations, chain newspapers, and syndicates; newspaper and radio, etc. Topics will be chosen in light of students' special interests. (3 cred.; jr., sr., grad.; prereq. consent of instructor; MTWThF III; 311MurH.) Mr. Casey.
- 133su.* Propaganda and Censorship in the Modern World. Propaganda and information activities of governments in war and peace. Democratic policies in appealing to public opinion contrasted with totalitarian methods of enforcing acceptance. Psychological warfare techniques. The structure, personnel, and procedures of official wartime opinion agencies and the peacetime propaganda activities of economic groups, political parties, welfare and other organizations. The agencies of communications and their role in the opinion-forming process. Techniques used in measuring propaganda and in determining what symbols come to the focus of public attention. (3 cred.; jr., sr., grad.; no prereq.; MTWF IV and 1 hr. ar.; 311MurH.) Mr. Casey.
- 210su.* Research in Newspaper Problems. Individual research in either historical or contemporary phases of newspaper, periodical, radio, or advertising fields. (2 or 3 cred.; seminar for graduate students; prereq. consent of instructors; hrs. ar.) Mr. Casey, Mr. Charnley.

SECOND TERM

- 14su.† Newspaper Reporting. Advanced reporting problems, both in news gathering and news writing. Extensive practice assignments. Writing the feature story. Specialized news sources. News standards and the ethical aspects of reporting and news presentation. (3 cred.; prereq. 13; MTWF IV and 1 hr. ar.; 302MurH.) Mr. Mickelson.
- 113su.* The Press and Foreign Affairs. An appraisal of the relationship between international affairs and the reporting and interpretation of news by the American, British, and totalitarian press. Foreign correspondents, the press and the radio in the important national states; some of the factors which affect news from these countries. A study of the channels of news communication in war and peace and an analysis of the nationalistic struggle for cable, wireless, and radio supremacy by the great powers. The place of the press associations. This course is intended to help the reader and listener understand the background of foreign news. (3 cred.; jr., sr., grad.; no prereq.; MTWThF III; 302MurH.) Mr. Nafziger.
- 210su.* Research in Newspaper Problems. (See 210su, first term.) Mr. Nafziger.

† This course is acceptable in the accelerated program in Journalism.

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

MATHEMATICS

FIRST TERM

- 1su. Higher Algebra. A collegiate treatment of the topics of elementary algebra for those who have had one year of elementary algebra. (5 cred.; all; prereq. 1 yr. of elementary algebra in high school; open for credit to any student offering not more than one-half year of high school higher algebra for entrance credit; MTWThF VI-VII; 101F.) Miss Alexander.
- 6su. Trigonometry. A treatment of logarithms and plane trigonometry. (5 cred.; all; prereq. 1 or high school higher algebra; open for credit to students with high school trigonometry; MTWThF I-II; 101F.) Mr. Fattu.
- 7su. College Algebra. Selected topics in algebra commencing with quadratic equations and extending through the theory of equations and determinants, omitting logarithms. (5 cred.; all; prereq. 1 or high school higher algebra; MTWF III-IV, Th III, V; 101F.) Miss Elveback.
- 15su. Elementary Mathematical Analysis I. This, together with Course 16, provides a course for premedical and other students who desire a survey of college mathematics including trigonometry, algebra, and calculus with emphasis on fundamental ideas rather than on technical preparation for more advanced courses in mathematics. (5 cred.; all; prereq. 1 or high school higher algebra; MTWF III, IV, Th III, V; 102F.) Mr. Colson, Mr. Garfin.
- 30su. Analytic Geometry. (5 cred.; all; prereq. 6 and 7 or 6 and 8 or 15 and 16; MTWThF VI-VII; 105F.) Mr. Munro.
- 50su. Calculus I: Differential Calculus. (5 cred.; jr., sr.; prereq. 30; MTWThF I-II; 124F.) Mr. Jensen.
- 90su. A Tutorial Course in Senior College Mathematics. Properly qualified students whose needs are not met by the courses listed may, by special arrangement, be given an opportunity of obtaining through lectures or through reading and conferences the content of other Senior College courses regularly offered by the department. In particular in the first term an opportunity will probably be given to take one of the two courses, Synthetic Metric Geometry (60su) or Introduction to the Theory of Equations (62su). (3 or 6 cred.; jr., sr.; prereq. 30; ar.) Mr. Olmsted, Mr. Garfin.
- 105su. Intermediate Calculus. Advanced topics in differential and integral calculus. This course, together with 106, is satisfactory as a prerequisite for 107. (3 cred.; jr., sr., grad.; prereq. 9 cred. in elementary calculus; MTWF IV, Th V; 105F.) Mr. Underhill.
- 106su. Differential Equations. A first course in differential equations with emphasis on their applications in physics and geometry. (3 cred.; jr., sr., grad.; prereq. 51; MTWThF I; 104F.) Mr. Olmsted.
- 109su.* Theory of Numbers. A study of the fundamental properties of integers, simple continued fractions, theory of number congruences and Diophantine equations. (3 cred.; jr., sr., grad.; prereq. 51; MTWThF III; 103F.) Mr. Jackson.
- 110su.* A Tutorial Course in Advanced Mathematics. Properly qualified students whose needs are not met by the courses listed may, by special arrangement, be given an opportunity of obtaining through lectures or through reading and conferences the content of other graduate courses regularly offered by the department. (3 or 6 cred.; jr., sr., grad.; prereq. 51; ar.) Mr. Jackson, Mr. Underhill, Miss Gibbens, Mr. Olmsted.

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140su.* Projective Geometry. The elementary projective forms and operations, the principle of duality, the theorems of Desargues, Pascal, and Brianchon with applications, and other topics. (3 cred.; jr., sr., grad.; prereq. 51 MTWThF II; 104F.) Miss Gibbens.

SECOND TERM

6su. Trigonometry. (See 6su, first term.) (5 cred.; all; prereq. 1 or high school higher algebra; open for credit to students with high school trigonometry; MTWThF VI-VII; 101F.) Miss Alexander.

7su. College Algebra. (See 7su, first term.) (5 cred.; all; prereq. 1 or high school higher algebra; MTWThF I-II; 101F.) Mr. Fattu.

16su. Elementary Mathematical Analysis II. (See 15su, first term.) (5 cred.; all; prereq. 15; MTWF III, IV, Th III, V; 102F.) Mr. Colson, Mr. Garfin.

51su. Calculus II; Integral Calculus. (5 cred.; jr., sr.; prereq. 50; MTWThF I-II; 124F.) Mr. Jensen.

90su. A Tutorial Course in Senior College Mathematics. (See 90su, first term.) Mr. Underhill, Miss Carlson, Mr. Garfin.

110su.* A Tutorial Course in Advanced Mathematics. (See 110su, first term.) Mr. Underhill, Miss Carlson.

125su.* Theory of Geometrical Constructions. This course deals with the nature of the geometrical constructions which can be done with ruler and compasses alone; also constructions by other means, e.g., by ruler alone, compasses alone, compasses and marked ruler, parallel rulers, T-square, etc. Special attention is paid to the three famous geometric problems of antiquity. The geometrical solution of cubic and quartic equations is also given. (3 cred.; jr., sr., grad.; prereq. Analytic Geometry; MTWThF II; 104F.) Miss Carlson.

MUSIC†

FIRST TERM

1su. Ear Training. (2 cred.; all; no prereq.; MTWThFS I; 103Mu.) Miss Kendall.

4su. Harmony. (3 cred.; all; prereq. 1, or may be taken concurrently; MTWThFS II; 103Mu.) Mr. Jennings.

11su. Piano. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Mr. Lindsay, Mr. Stephens, Miss Kendall.

12su. Voice. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Mr. Killeen, Miss Hull, Mrs. Snyder.

13su. Violin. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Mr. Peterson.

14-26su. Instruments of the Orchestra. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Ar.

27su. Organ. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Mr. Jennings.

31su. Music Appreciation (Symphony). (2 cred.; all; no prereq.; MTWF IV; 104Mu.) Mr. Oberg.

36su. History of Music. (2 cred.; all; no prereq.; MTWThF III; 103Mu.) Mr. Ferguson.

40su. Orchestra. (2 cred.; all; consent of instructor; MTWThF V; 4Mu.) Mr. Oberg.

44su. Chorus. (1 cred.; all; no prereq.; T 7:00 to 9:00 p.m.; 5NMA.) Mr. Killeen.

† Courses for which no special fee is indicated may be taken by Summer Session students on payment of the regular Summer Session fee. Students who pay as much as \$25 per term for special music fees may enroll for other courses in any department of the Summer Session for an additional fee of \$19.80 per term, making a total of \$44.80 for general and special fees. All students who register for either the general courses or the special courses must pay the \$2 deposit.

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

- 59su. Technique of Voice. (2 cred.; jr., sr.; prereq. 4-5 and 6 cred. in 12 or 12C; MTWF IV; 103Mu.) Mr. Killeen.
- 76su. Form and Analysis. (3 cred.; jr., sr.; prereq. 4-5 and Psy. 1-2; MTWThFS II; 104Mu.) Mr. Stephens.
- 77-78-79su. Composition-Orchestration. (2 cred.; prereq. 4-5-6, 7-8; ar.; Mu.) Mr. Ferguson.
- 83-84-85su. Advanced Composition. (2 cred.; prereq. 77-78-79; ar.; Mu.) Mr. Ferguson.
- 200-201-202su. Basis of Musical Expression. (3 cred.; grad.; MWF VII, VIII; 104Mu.) Mr. Ferguson.
- 205-206-207su. Composition in Larger Forms. (3 cred.; grad.; ar.; Mu.) Mr. Ferguson.
- 209-210-211su. Advanced Topics in Musical Analysis. (3 cred.; grad.; TTh VII, VIII; 104Mu.) Mr. Oberg.

SECOND TERM

- 11su. Piano. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Mr. Lindsay, Mr. Stephens.
- 12su. Voice. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Mrs. Snyder.
- 13su. Violin. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Mr. Peterson.
- 14-26su. Instruments of the Orchestra. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Ar.
- 27su. Organ. Two lessons a week. Fee \$25. (2 cred.; ar.; Mu.) Ar.
- 33su. Music Appreciation. (Program and Chamber Music.) (2 cred.; all; no prereq.; MTWF IV; 104Mu.) Ar.

PHILOSOPHY

FIRST TERM

Students who for reasons connected with military service need courses or sequences other than those listed are invited to confer with the instructors before or during the registration periods.

- 3su. Ethics. Problems of life treated in terms of (1) contemporary social, political, and economic forces and (2) the character of the individual. The psychological and philosophical foundations of morality; the reconstruction of morality; the history of morals and ethical thought. (3 cred.; soph., jr., sr.; no prereq.; MTWThFS II; 302F.) Mr. Castell.
- 63su. Principles of Mature Thinking. From infantile to adult intelligence. A study of language, meaning, understanding, reasoning, and the ways of knowing. The functions of logic and experience. Critique of infantilism in thought and conduct. Applications to problems of philosophy and education. (3 cred.; soph., jr., sr.; no prereq.; MTWThFS III; 302F.) Mr. Feigl.
- 153su.* Philosophy of Science. An attempt to provide a clear understanding of the meaning, methods, and implications of modern science through the examination of basic concepts, presuppositions, and procedures. The topics include description, explanation, prediction, experimentation; space, time, number, matter, energy; causality, probability, statistics; organic life, evolution, mind. (3 cred.; jr., sr., grad.; MTWFS IV and 1 hr. ar.; 302F.) Mr. Feigl.
- 191su.* Seminar. Research problems in philosophy. (Cred. ar.; open only to qualified students upon consultation with instructor.) Mr. Feigl, Mr. Castell.

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

SECOND TERM

- 1su. Problems of Philosophy. Introduction to the subject; the main fields of investigation; permanent problems; principal methods and schools of philosophy; historical and contemporary views. (3 cred.; fr., soph., jr., sr.; no prereq.; MTWThFS I; 302F.) Mr. Conger.
- 2su. Logic. A study of the difference between logical and fallacious reasoning; types of fallacies; the rules of a good definition; syllogisms; what constitutes proof; hypothesis; generalization; probability; evaluation. (3 cred.; fr., soph., jr., sr.; no prereq.; MTWFS IV and 1 hr. ar.; 302F.) Miss Shaw.
- 70su. Modern Philosophies of Social Reform. Social philosophy as theory of social criticism. Central position of law and property in a theory of social criticism. Examination of democracy, laissez-faire, revolution, collective responsibility, communism, and fascism as concepts in modern social criticism. (3 cred.; soph., jr., sr.; MTWThFS III; 302F.) Miss Shaw.
- 180su.* History of Religions. A study of the chief features of the principal religions of the world—a course such as is sometimes called "Comparative Religion"—with special emphasis upon resemblances, differences, and possible adjustments. Readings in sacred literature. (3 cred.; jr., sr., grad.; MTWThFS II; 302F.) Mr. Conger.
- 192su.* Seminar. Research problems in philosophy. (Cred. ar.; open only to properly qualified students upon consultation with instructor.) Mr. Conger, Miss Shaw.

NOTE—For Mr. Castell's course in Humanities (first term), see Humanities, 3su, page 33.

PHYSICS

FIRST TERM

- 1-2-3su. Introduction to Physical Science, Part I. Lectures and experimental demonstrations. (4½ cred.; all; prereq. high school algebra and plane geometry; lect. MWThF I-II, T I; 133Ph.) Mr. Rassweiler.
- 1a-2a-3asu.† Introduction to Physical Science, Part I. Laboratory included. Fulfills group requirements in Science, Literature, and the Arts. (6 cred.; all; prereq. high school algebra and plane geometry; lect. MWThF I-II, T I; 133Ph.; lab. TTh VI-VIII; 153Ph.) Mr. Rassweiler.
- 4su.‡‡ General Physics, Part I. (Primarily for premedical students.) Mechanics and heat. Laboratory included. (2½ cred.; all; prereq. completion of Math. 15-16, or registration in calculus; lect. and quiz MTThF II, M IX; 150Ph.; lab. T VIII-IX, or W VIII-IX, or Th VIII-IX; 153Ph.) Mr. Haun.
- 5su.‡‡ General Physics, Part I. (Primarily for premedical students.) Optics and acoustics. Laboratory included. (2½ cred.; all; prereq. 4 or equiv.; lect. and quiz MTWThF III; 166Ph.; lab. M VI-VII, or W VI-VII; 352Ph.) Mr. Valasek.
- 7su.‡‡ General Physics, Part I. (Primarily for students in the Institute of Technology and those majoring in physics, mathematics, or chemistry.) Mechanics and heat. Laboratory included. (2½ cred.; all; prereq. registration in calculus; lect. and quiz MTThF II, M IX; 150Ph.; lab. T VIII-IX, or W VIII-IX, or Th VIII-IX; 153Ph.) Mr. Haun.
- 9su.‡‡ General Physics, Part I. (Primarily for students in the Institute of Technology and those majoring in physics, mathematics, or chemistry.) Optics and acoustics. Laboratory included. (2½ cred.; all; prereq. Phys. 7 or equiv.; lect. and quiz MTWThF III; 166Ph.; lab. M VI-VII, or W VI-VII; 352Ph.) Mr. Valasek.

† A fee of \$3 per term is charged.

‡‡ A fee of \$1 per term is charged.

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- 100su. Intermediate Physics. Analytical mechanics; problems and fundamental theorems. (3 cred.; all; prereq. calculus and 15 cred. in physics; MTWThF III and 1 hr. ar.; 145Ph.) Mr. Buchta.
- 144su.††† Electricity Measurements. (3 cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 51; lect. MWF VI; lab. VII-IX MWF.) Mr. Wall.

SECOND TERM

- 1-2-3su. Introduction to Physical Science, Part II. (See 1-2-3su, first term.) (4½ cred.; all; prereq. Phys. 1-2-3su, Part I, or equiv.; lect. MWThF I-II, T I; 133Ph.) Mr. Rassweiler.
- 1a-2a-3asu.† Introduction to Physical Science, Part II. (See 1a-2a-3asu, first term.) (6 cred.; all; prereq. Phys. 1a-2a-3asu, Part I, or equiv.; lect. MWThF I-II, T I; 133Ph.; lab. TTh VI-VIII; 153Ph.) Mr. Rassweiler.
- 4su.†† General Physics, Part II. (See 4su, first term.) (2½ cred.; all; prereq. Phys. 4su, Part I; lect. and quiz MTThF II, M IX; 150Ph.; lab. T VIII-IX, or W VIII-IX, or Th VIII-IX; 153Ph.) Mr. Haun.
- 5su.†† General Physics, Part II. (See 5su, first term.) (2½ cred.; all; prereq. Phys. 5su, Part I; lect. and quiz MTWThF III; 166Ph.; lab. M VI-VII, or W VI-VII; 352Ph.) Mr. Valasek.
- 6su.††† General Physics. (Primarily for premedical students.) Electricity and modern physics. Laboratory included. (5 cred.; all; prereq. Phys. 4, or equiv.; lect. and quiz MTWF III, IV, Th III; 133Ph.; lab. MF VIII-IX; 231Ph.) Mr. Haun.
- 7su.†† General Physics, Part II. (See 7su, first term.) (2½ cred.; all; prereq. Phys. 7su, Part I; lect. and quiz MTThF II, M IX; 150Ph.; lab. T VIII-IX, or Th VIII-IX; 153Ph.) Mr. Haun.
- 8su.††† General Physics. (Primarily for students in the Institute of Technology and those majoring in physics, mathematics, or chemistry.) Electricity and modern physics. Laboratory included. (5 cred.; all; prereq. Phys. 7, or equiv.; lect. and quiz MTWF III, IV, Th III; 133Ph.; lab. MF VIII-IX; 231Ph.) Mr. Haun.
- 9su.†† General Physics, Part II. (See 9su, first term.) (2½ cred.; all; prereq. Phys. 9su, Part I; lect. and quiz MTWThF III; 166Ph.; lab. M VI-VII, or W VI-VII; 352Ph.) Mr. Valasek.
- 109su.* 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; MTWF IV, T III, and 1 hr. ar.; 145Ph.) Mr. Buchta.
- 134su.*††† Experimental Optics. Measurement of indices of refraction, wave lengths, intensities, absorption, optical activity, focal lengths, and aberrations of lenses. (3 cred.; jr., sr., grad.; prereq. a general course in physics; lab. MWF VI-IX; 352Ph.) Mr. Valasek.
- 136su.*††† Spectrum Analysis. Experiments with the spectrograph. Analysis of spectra. (3 cred.; jr., sr., grad.; prereq. a general course in physics; lab. MWF VI-IX; 352Ph.) Mr. Valasek.

POLITICAL SCIENCE

FIRST TERM

- 1su. American Government and Politics: (Part 1 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

† A fee of \$3 per term is charged.

†† A fee of \$1 per term is charged.

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

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- opinion; nominations and elections. Special attention will be given to wartime changes and possible postwar developments throughout the course. (3 cred.; all; no prereq.; MTWThF II; 211Bu.) Mr. Hawkins.
- 7su. Comparative European Government. An introduction to and analysis of the governments of England, France, Italy, Germany, and Soviet Russia. Structural features; parties and politics; ideologies; fundamental principles. (3 cred.; all; no prereq.; MTWThF I; 209Bu.) Mr. McClosky.
- 27su. World Politics in the Far East. Background and development of the war in Eastern Asia and the Pacific; Japan's "New Order" and the opposing interests and policies of China, the United States, the Soviet Union, and other powers; factors conditioning postwar reconstruction. (3 cred.; all; no prereq.; MTWF IV; 1 hr. ar.; 209Bu.) Mr. Hawkins.
- 121su. Municipal Administration. Forms of administrative organization; personnel; purchasing; budgeting, accounting, and reporting; records and accounts; finance. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; MTWThF II; 339Lib.) Mr. Ludwig.
- 128su. Community Postwar Planning. Community development; population problems; economic base of the community; use areas; circulation; housing; community facilities and services; public finance; planning procedures and aids; organization for planning. (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor; MTWThF I; 339Lib.) Mr. Ludwig.
- 137su. American Political Parties, Campaigns and Elections. 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; MTWFS IV; 1 hr. ar.; 211Bu.) Mr. Hawkins.
- 148su. European Dictatorships. An analysis and evaluation of the origins, structural organization, political philosophy and public policy of modern totalitarian governments, particularly Germany, Italy, Soviet Russia, and Spain. (3 cred.; jr., sr., grad.; no prereq.; MTWThF III; 111Bu.) Mr. McClosky.
- 170su. Problems of Postwar Domestic Reconstruction. Same as Social Science 101, Sociology 167. (3 cred.; open to all; no prereq.; MTWThF III; 109J.) Mr. E. M. Kirkpatrick, Mr. Monachesi, Mr. Lindblom.
- 185su. International Reconstruction. Contending ideologies: democracy, communism, and totalitarianism in Europe and the Far East; interim measures of order and security; international problems and planning. (3 cred.; jr., sr., grad.; prereq. 6 cred. or consent of instructor; MTWThF II; 209Bu.) Mr. Quigley.
- 201su.* Seminar in American Government, Politics, and Administration. (Cred. ar.; grad. and sr. with the consent of the instructor; ar.; first meeting 12:00 noon first day of classes; 16Lib.) Mr. Ludwig.
- 297su.* Seminar in International Relations. (Cred. ar.; grad. and sr. with consent of instructor; first meeting 10:30 a.m. first day of classes; 205Bu.) Mr. Quigley.

SECOND TERM

- 2su. American Government and Politics. (Part 2 of Political Science 1-2-3.) A description, analysis, and evaluation of the legislative, executive, and judicial branches of government with special attention to wartime changes and possible postwar problems. (3 cred.; all; no prereq.; MTWThF I; 221Bu.) Mr. Kirkpatrick.

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- 25su. World Politics. An introduction to the field of contemporary international relations; the policies of the great powers today; nationalism; internationalism; Europe and the postwar settlement. (3 cred.; all; no prereq.; MTWThF II; 211Bu.) Mr. Mills.
- 161su. Problems of Democracy. The meaning of democracy; an examination and evaluation of the criticisms and defenses of democracy; an analysis of democratic institutions in America with special reference to the problems of the war and postwar reconstruction. (3 cred.; jr., sr., grad.; others with consent of the instructor; no prereq. MTWThF II; 221Bu.) Mr. Kirkpatrick.
- 198su. Contemporary World Problems. Japanese imperialism in the Far East and the Western Pacific; India; the interests of the United States and the other Western powers in the Far East; the significance of the war in the Pacific and its relation to the war in Europe; the postwar settlement in the Western Pacific. (3 cred.; soph. with a "C" average; jr., sr., grad.; no prereq.; MTWThF III; 211Bu.) Mr. Mills.
- 202su.* Seminar in American Government, Politics, and Administration. (Cred. ar.; grad., and sr. with consent of instructor; ar.; first meeting 12:00 noon first day of classes; 213Bu.) Mr. Kirkpatrick.
- 298su.* Seminar in International Relations. (Cred. ar.; grad., and sr. with consent of instructor; ar.; first meeting 12:00 noon first day of classes; 215Bu.) Mr. Mills.

PSYCHOLOGY

FIRST TERM

- 1su. General Psychology. First half of 1-2su. (3 cred.; all; no prereq.; MTWThFS I; 115Psy.) Mr. Baden.
- 1-2su. General Psychology. An introductory survey of psychology; its materials, fundamental laws, applications, and relations to other sciences. (6 cred.; all; no prereq.; MTWThF III, MTWF IV, Th V; 1 VH.) Mr. Heron.
- 4-5su.‡ Introductory Laboratory Psychology. Simple experiments illustrating the subject matter of contemporary psychology. Included are human and animal learning, visual experience, differences in artistic, musical, and other kinds of abilities, measurement of each student's personality traits, and reactions to advertisements. (4 cred.; soph., jr., sr.; prereq. gen. psy.; MTWThF VI, VII, VIII; 211Psy.) Mr. MacCorquodale.
- 125-126su. Psychology of Individual Differences. Quantitative studies on the contributions of such factors as sex, race, physical traits, family heredity, environment, and age to the causation of individual differences, including discussion of the relation of these topics to the war effort. (6 cred.; jr., sr., grad.; prereq. 1-2; 4-5, or 5 credits in statistics; MTWThF II, III; 115Psy.) Mr. Paterson.
- 144-145su. Abnormal Psychology. A survey of ideas of causation and of techniques of treating abnormal behavior from early historical times; special emphasis is put upon the care and treatment of the abnormal in America. Consideration of the various psychoses and psychoneuroses and of social problems related to them. (6 cred.; jr., sr., grad.; prereq. gen. psy.; MTWThF II, III; 206Pt.) Mr. Bird.

SECOND TERM

- 1-2su. General Psychology. (See 1-2su first term.) (6 cred.; all; no prereq.; MTWThF III, MTWF IV, Th V; 115Psy.) Mr. Tinker.
- 2su. General Psychology. Second half of 1-2su. (3 cred.; all; prereq. first half of 1-2; MTWThF III; 1 VH.) Mr. Baden.

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

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- 130su.†† Vocational and Occupational Psychology. Theory and practice in present-day vocational guidance. Theory and use of the *Dictionary of Occupational Titles* in the United States Employment Offices, in industry, and in the armed forces. Experience in interviewing and in giving, scoring, and interpreting vocational tests is provided. (3 cred.; jr., sr., grad.; prereq. 9 cred. in psy.; lect. MF IV, Th V; lab. TW IV, V; 211 Psy.) Mr. Longstaff.
- 160su. Psychology in Personnel Work. Psychology as applied to the selection and retention of a stabilized personnel in business and the armed services. The standardized interview; principles and techniques of employment tests; methods of judging character qualities; the rating scale; personnel classification methods. (3 cred.; jr., sr., grad.; prereq. gen. psy.; MTWThF III; 211Psy.) Mr. Longstaff.
- 171-172su. Introduction to Clinical Psychology. A survey of clinical psychology in relation to mental deficiency, special abilities and disabilities, personality disorders, and psychosomatic disturbances in adults and children. (6 cred.; sr., grad.; prereq. 12 cred. in psy. or child welfare, or ed. psy., and permission of instructor; MTWThF I, II; 115Psy.) Mr. Hunt.

ROMANCE LANGUAGES

FIRST TERM

FRENCH

- 1su. Beginning French. Regular beginning course with special attention to those who desire a reading knowledge of French. (5 cred.; all; no prereq.; MTWThF I-II; 202F.) Miss Guinotte.
- 3su. Intermediate French. Equivalent to either French 3f or French 4w. (5 cred.; prereq. 3 or 2 with grade of C; MTWThF III, MTWFS IV; 202F.) Mr. Clefthon.
- 54su. Practical French Conversation. Equivalent to French 54w. (2 cred.; prereq. 3-4 or equiv.; TWThF I; 203F.) Mr. Fermaud.
- 75su† or 190su. French Civilization and Culture. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; MTWF IV; 203F.) Mr. Fermaud.
- 121su.* Eighteenth Century French Literature: Bayle, Diderot, Voltaire, Rousseau. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; TWThF II; 203F.) Mr. Sirich.
- 159su.* Trends in Contemporary French Prose. A continuation of French 158su: French Literature between Two Wars. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; TWThF III; 203F.) Mr. Fermaud.

PORTUGUESE

- 1su. Beginning Portuguese. (5 cred.; all; no prereq.; MTWThF I-II; 227F.) Ar.

SPANISH

- 1su. Beginning Spanish. (5 cred.; all; no prereq.; MTWThF I-II; 201F.) Ar.
- 3su. Intermediate Spanish. (5 cred.; all; prereq. 1-2 or two years of high school Spanish; MTWThF III; MTWFS IV; 226F.) Ar.
- 4su. Intermediate Spanish. (5 cred.; all; prereq. 3 or three years of high school Spanish. MTWThF III, MTWFS IV; 227F.) Ar.
- 53su. Spanish Composition and Conversation. Equivalent to 53f. (2 cred.; jr., sr.; prereq. 3-4 or equiv.; TWThF II; 226F.) Mr. Cúneo.

† French 75, Spanish 65, Spanish 67. Graduate students who wish to take these courses for credit will register for the higher of the two numbers listed and arrange with the instructor for additional work in the subject.

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

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

- 67su† or 111su. Spanish Literature after 1850. (2 cred.; jr., sr., grad.; prereq. 68-69 or equiv.; TWThF I; 226F.) Mr. Pattison.
- 70su. Latin-American Culture. (Course conducted in Spanish.) Equivalent to 70w. (2 cred.; jr., sr.; prereq. 4 or equiv.; TWThF III; 201F.) Mr. Cúneo.
- 75su. Survey of Spanish-American Literature. Equivalent to 74f. (2 cred.; prereq. 4 or equiv.; MTWF IV; 201F.) Ar.
- 141su. Contemporary Latin-American Literature. Equivalent to 140f. (2 cred.; jr., sr., grad.; prereq. 68-69 or 74-75 or equiv.; TWThF III; 204F.) Ar.
- 174su.* Contemporary Spanish Literature: The Novel. Equivalent to 174f. (2 cred.; jr., sr., grad.; prereq. 68-69; TWThF II; 204½F.) Mr. Pattison.

Instituto de Estudios Hispano-Americanos‡

The institute, properly housed, will offer intensive training in spoken Spanish, Spanish-American culture, and Spanish-American literature. 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 Instituto 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) elementary, (2) intermediate, and (3) advanced students. The program carries nine quarter credits. The institute will be staffed by Professor James Cúneo, director, and an adequate number of native assistants. The probable cost, including board and room, will be \$140; including meals but not room, \$113. Applications for reservations at the institute should be mailed to Professor James Cúneo, University of Minnesota, Minneapolis 14, on or before June 1, 1944. Registration will follow the usual Summer Session procedure as described elsewhere in this bulletin. Requests for further information should be addressed to the director of the Summer Session, 700-A Administration Building, University of Minnesota, Minneapolis 14.

SECOND TERM

FRENCH

- 1su. Beginning French. (See 1su, first term.) (5 cred.; all; no prereq.; MTWThF III; MTWFS IV; 201F.) Ar.
- 54su. Practical French Conversation. Equivalent to 54w. (2 cred.; prereq. 3-4 or equiv.; TWThF II; 202F.) Ar.
- 146su.* Modern French Drama. Equivalent to 146w. (2 cred.; jr., sr., grad.; prereq. 70-71-72 or 73-74 or equiv.; TWThF III; 203F.) Mr. Barton.

PORTUGUESE

- 2su. Beginning Portuguese. Continuation of Portuguese 1. (5 cred.; all; prereq. 1; MTWThF I-II; 227F.) Ar.

SPANISH

- 1su. Beginning Spanish. (5 cred.; all; no prereq.; MTWThF I-II; 201F.) Mr. Barton.
- 2su. Beginning Spanish. (Continuation of Spanish 1. (5 cred.; all; prereq. Spanish 1; MTWThF I-II; 226F.) Ar.

† French 75, Spanish 65, Spanish 67. Graduate students who wish to take these courses for credit will register for the higher of the two numbers listed and arrange with the instructor for additional work in the subject.

‡ A laboratory fee of \$40 is charged for this course in addition to tuition and incidental fees. Board and room charge is additional.

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

4su. Intermediate Spanish. (5 cred.; all; prereq. 3 or three years of high school Spanish; MTWThF III, MTWFS IV; 202F.) Mr. Grismer.

65su† or 115su. Literature of the Spanish Renaissance. (2 cred.; jr., sr.; grad.; prereq. 65-66-67 or 68-69; TWThF II; 203F.) Mr. Grismer.

RUSSIAN

FIRST TERM

1su. Beginning Russian. Beginning course with special attention to the needs of those who desire a reading knowledge of modern Russian. Exercises in conversation will be offered. (4 cred.; all; no prereq.; TWThF I-II; 311F.) Mr. Reichardt.

30su. Interpretation of Russian Literature. Reading and discussion of 19th century prose and poetry. (3 cred.; prereq. Russian 1-2 or 20; TWF III-IV; 311F.) Mr. Reichardt.

SECOND TERM

2su. Intermediate Russian. Continuation of Russian 1. (4 cred.; all; prereq. Russian 1; TWThF I-II; 311F.) Mr. Reichardt.

SOCIAL SCIENCE

FIRST TERM

101su. Problems of Postwar Domestic Reconstruction. An examination of selected economic, political, and social problems involved in postwar domestic reconstruction. Each class session will be conducted as a "round table" by three members of the staff. (3 cred.; open to all; no prereq.; MTWThFS III; 109J.) Mr. E. M. Kirkpatrick, Mr. Monachesi, Mr. Lindblom.

SOCIOLOGY AND SOCIAL WORK

FIRST TERM

SOCIOLOGY

1su. Introduction to Sociology. A study of the characteristics of human group life. An analysis of the factors associated with the development of human group life and man's social environment; the structure of the social environment and its influence upon the individual's behavior; the processes involved in social change and the social problems that accompany social change. A survey of the fundamental social institutions such as the family and the church; the development and decline of social institutions; change in the institutional functions and social disorganization. (3 cred.; open to all; no prereq.; Sec. 1 MTWThF I and 1 hr. ar., 6F, Miss West; Sec. 2, MTWThF II and 1 hr. ar., 109J.) Mr. Monachesi.

14su. Rural Sociology. A study of rural and urban relationships. The position of an agricultural class in an industrial society. (3 cred.; 2nd qtr. fr.; prereq. Soc. 1; MTWF IV, Th VI and 1 hr. ar.; 109F.) Mr. Sletto.

49su. Social Pathology. A survey course of contemporary social problems with especial emphasis on the conditions and processes in personal demoralization and social disorganization. The scientific approach to the study of poverty, unemployment, physical diseases and defectiveness, mental deficiency, insanity, vagrancy, suicide, etc. (3 cred.; 2nd qtr. fr.; prereq. Soc. 1; MTWThF III and 1 hr. ar.; 104J.) Mr. Sletto.

103su. Sociology of Conflict. (3 cred.; jr., sr., grad.; prereq. Sociology 1 and 15 cred. in social science, child welfare, education, philosophy, or psychology; or consent of instructor; MTWF IV, Th VI and 1 hr. ar.; 109J.) Mr. Vold.

† French 75, Spanish 65, Spanish 68. Graduate students who wish to take these courses for credit will register for the higher of the two numbers listed and arrange with the instructor for additional work in the subject.

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

- 167su. Problems of Postwar Domestic Reconstruction. Same as Soc. Sci. 101su. (3 cred.; open to all; no prereq.; MTWThF III and 1 hr. ar.; 109J.) Mr. Monachesi, Mr. E. M. Kirkpatrick, Mr. Lindblom.
200su.* General Seminar. (2 cred.; ar.) Staff.

SOCIAL WORK

- 91su. Case Method Applied to the Study of Human Problems. (3 cred.; jr., sr.; prereq. 49; MTWF IV, Th VI and 1 hr. ar.; 5F.) Mrs. Fenlason.
109su. The Field of Social Work. (3 cred.; grad.†; prereq. Soc. 1 and 15 cred. in soc. sci., child welfare, ed., phil., or psy.; MTWThF III and 1 hr. ar.; 2J.) Mrs. Doyle.
129-130su.† Principles of Social Case Work. A study of the purposes, problems, and processes of generic social case work, including a study of the relationship between the individual and the social worker and community as contributory to the treatment of the problems presented. (4 cred.; grad.†; MTWTh I-II; 2J.) Mrs. Fenlason.
170su. Introductory Psychiatry. A lecture course, includes a discussion of: mental hygiene, mental mechanisms, psychiatric history-taking, review of schools of psychiatry, classification of mental diseases. (3 cred.; MTWThF III and 1 hr. ar.; ar.) Dr. Hinckley.
171su. Descriptive Neuropsychiatry. (Same as Medicine 171.) (Prereq. Med. 70 or Psy. 144-145; 33 hrs.) Dr. Cottrell.
173Asu. Behavior Problems in Younger Children. (The same as Child Welfare 140su.) (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; MTWThF III and 1 hr. ar.; 202Pt.) Mr. Harris.
180su†‡. Field Work Training in Social Work. (3-5 cred.; grad.†) Mrs. Doyle, Mrs. Poor.
240su. General Seminar in Social Work. (2-3 cred.; ar.) Staff.

SECOND TERM

SOCIOLOGY

- 1su. Introduction to Sociology. (See 1su, first term.) (3 cred.; open to all; no prereq.; MTWThF I and 1 hr. ar.; 104J.) Mr. Schneider.
2su. Individual and 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 tension and frustrations with relation to leadership, crowd behavior, and fascism. Social control and social change in relation to postwar objectives. (3 cred.; prereq. 1; MTWThF II and 1 hr. ar.; 104J.) Miss West.
14su. Rural Sociology. (See 14su, first term.) (3 cred.; 2nd qtr. fr.; prereq. Soc. 1; MTWThF III and 1 hr. ar.; 109J.) Mr. Schneider.
119su. The Family. With special reference to contemporary marriage problems. (3 cred.; jr., sr., grad.; prereq. Soc. 1 and 15 cred. in social science, child welfare, education, philosophy, or psychology or consent of instructor; MTWF IV, Th VI and 1 hr. ar.; 109J.) Mr. C. Kirkpatrick.
200su.* General Seminar. (2 cred.; ar.) Staff.

† Admission on consultation with a social work adviser.

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

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SOCIAL WORK

- 60su. Social Protection of the Child. (3 cred.; jr., sr.; prereq. Soc. 49; MTWThF III and 1 hr. ar.; 104J.) Miss Green.
- 139su.† Personality Development As It Affects Case Work Practice. (3 cred.; grad.†; MTWThF I and 1 hr. ar.; 2J.) Miss Green.
- 173Bsu. Behavior Problems in Older Children. (The same as Child Welfare 141su.) (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; MTWThF I and 1 hr. ar.; 202Pt.) Mrs. Maurer.
- 181su.††††† Field Work Training in Social Work. (3-5 cred.; grad.†) Mrs. Clendening, Mrs. Poor.
- 198su. Psychosomatic Aspects of Illness. (3 cred.; grad.† MTWThF II and 1 hr. ar.; 109J.) Mrs. Clendening.
- 240su. General Seminar in Social Work. (2-3 cred.; ar.) Staff.

SPEECH

FIRST TERM

- Speech Clinic††. For students who have particular speech defects such as cleft palate, stuttering, lisping, dialect. (Ar. with director.) Mr. Bryngelson, Miss Brody.
- 1-2-3su.‡ Fundamentals of Speech. Speech as social adaptation and control. Technique of body and voice. Oral reading. Public speaking. (3 cred.; fr., soph., jr., sr.; no prereq.; MTWThFS I; 305F.) Mr. Gilkinson and others.
- 31su.††† Introduction to the Theater. A course designed to acquaint the student with the theater of today. Readings and projects in various modern theater crafts. (3 cred.; soph., jr., sr.; prereq. 1-2-3 or 5-6 or concurrent registration; MTWThFS I; 19Mu.) Mr. Whiting.
- 61su.‡ Personality Development through Speech. A study of behavior as indicated through speech; why and how man talks; basic elements in the development of unsocial and inadequate emotional patterns; speech symptoms evaluated from cause and effect relations; psychologic and social factors in speech; analysis of individual problems of self-consciousness, stage fright, and ineffective speech behavior, speech as a means of self-control and social control as applied to teacher and pupil. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6, Psy. 1-2; MTWThFS II; 409aF.) Mr. Bryngelson.
- 65su.‡ Radio Speech. Speech arts and psychology of the radio. Announcing and broadcasting. The radio speech. Radio drama and interpretative reading, voice, diction, articulation, pronunciation. Practice, exercises, projects, and reports on problems of appeal and audience response. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; MTWThF VI and 1 hr. ar.; 302MurH.) Mr. Ziebarth.
- 67su.‡ Phonetics. The study of English speech sounds as they occur separately and in connected speech. Strong and weak forms, stress, assimilation. Practice in ear training. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; MTWThF VI; 305F.) Mr. Dusenbury.

† Admission on consultation with a social work adviser.

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

†† The clinic will accept a limited number of nonstudent patients on the payment of a fee of \$65 for a term of eight weeks.

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

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

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

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

- 81su.‡ Interpretative Reading. Esthetic theory of literature and of oral reading. Practice in reading for interpretation and mastery of technique. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; MTWThFS II; 308F.) Mr. Rarig.
- 101su. Argumentation and Persuasion. Argumentation as a method of analysis, of controversial questions, briefing adaptive and nonadaptive persuasion, practice in speaking and writing. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6; Psy. 1-2; 10 cred. in soc. sci.; MTWThF VII and 1 hr. ar.; 308F.) Mr. Rarig.
- 105su.* Theory of Reading and Acting. Literature as an art; its various forms; the psychology of the creative imagination; speech elements in literature; origins and nature of speech symbols and technique of their use. Collateral readings, problems, reports, term papers. (3 cred.; prereq. 1-2-3 or 5-6, 81-82-83, Psy. 1-2; MTWThFS I; 308F.) Mr. Rarig.
- 112su.‡‡‡ Stage Direction. Practice and theory of stage direction. Esthetics of the theater, analysis of the play, casting, rhythm, reading, organization of production. Each student will direct two one-act plays this term. (3 cred.; sr., grad.; prereq. 31, 32-33, 34, 91, 92, 93; MTWThFS III; 18Mu.) Mr. Whiting.
- 121-122su.* Advanced Speech Problems. Experimental methods in general speech. Review of published research, special reports. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, Psy. 1-2; MTWThFS II; 409F.) Mr. Gilkinson.
- 151su.§ (also listed as Ed.C.I.140su.) The Teaching of Speech. Orientation in problems of speech education. Review of studies. Teaching methods and special devices, voice recording, tests. Directions of extracurricular activities. (3 cred.; jr., sr.; grad.; prereq. 1-2-3 or 5-6 or equiv. or permission of instructor; MTWThFS III; 301F.) Mr. Gilkinson.
- 162su.* Speech Pathology. Neurology of Speech. Dysphemia and its associated symptom, stuttering. Relation of sidedness and speech disorders, heredity, current theories of dysphemia, types of treatment. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6 and 61, 67; MTWThFS IV and 1 hr. ar.; 406F.) Ar.
- 181-182-183su.* Readings in Speech. Directed reading 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.) Staff.

SECOND TERM

- 1su.‡ Fundamentals of Speech. Same as first term. Ar.
- 2-3su.‡ Fundamentals of Speech. Continuation of Course 1, above. (MTWThF III; 308F.) Ar.
- 32su.‡‡‡ Beginning Acting. Creative approach. (3 cred.; soph., jr., sr.; prereq. 31; MTWThFS II; 19Mu.) Mr. Whiting.
- 66su.‡‡‡ Radio Drama. A study of the historical development of radio drama, with an analysis of the various types of radio dramas including production, direction, and acting techniques. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; 65 recommended; MTWThFS II; 19Mu.) Mr. Dusenbury.
- 113su.‡‡‡ Stage Direction. Continuation of 112su. (MTWThFS III; 18Mu.) Mr. Whiting.
- 181-182su.* Readings in Speech. Mr. Bryngelson.

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

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

§ Carries undergraduate credit only in the College of Education.

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

ZOOLOGY

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

FIRST TERM

- 1su.†† General Zoology. Structure, physiology, embryology, classification, and evolution of animals. (5 cred.; all; no prereq.; lect. MTWThFS I, 211Z; lab. MTWTh VI, VII, VIII; 101Z.) Mr. Clark.
- 21su.†† Histology. Microscopic structure of the tissues and organs. (5 cred.; soph., jr., sr.; prereq. 1-2-3 or equiv.; lect. MTWTh VI, F VI, VII; lab. MTWTh VII, VIII, IX; 201Z.) Mr. Ringoen.
- 51su.†† Introductory Animal Parasitology. An elementary course dealing with parasitic protozoa, worms, and arthropods, and their relation to diseases of man and animals. (5 cred.; jr., sr.; prereq. 1-2-3 or equiv.; lect. MTWTh VI, F VI, VII; 211Z.; lab. MTWTh VII, VIII, IX; 208Z.) Mr. Cuckler.
- 197su.* Problems. Advanced work in some special line. (3 cred. or more; jr., sr., grad.; prereq. 1-2-3 and special requirements; ar.) Mr. Ringoen, Mr. Clark, Mr. Cuckler.

SECOND TERM

- 2su.†† General Zoology. Continuation of 1su. (5 cred.; all; prereq. 1su or equiv.; lect. MTWThFS I, 211Z; lab. MTWTh VI, VII, VIII; 101Z.) Mr. Wodsedalek.
- 198su.* Problems. Advanced work in some special line. (3 cred. or more; jr., sr., grad.; prereq. 1-2-3 and special requirements; ar.) Mr. Ringoen, Mr. Clark, Mr. Cuckler.

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

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

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

INSTITUTE OF TECHNOLOGY

COLLEGE OF ENGINEERING AND ARCHITECTURE§

AERONAUTICAL ENGINEERING

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

SUMMER QUARTER

(Hours and days to be arranged)

- 3su. Aeronautics. Instruments. Meteorology. Aviation. (3 cred.; prereq. M.&M. 13.) Ar.
83su. Stresses in Simple Structures. Statically determinate trusses and beams. Graphic statics. Combined stresses. Airplane wing bracing. Short and long struts. (3 cred.; prereq. M.&M. 128.) Ar.
102su. Aerodynamics. Dynamic loads, stability, maneuverability, controllability, Prandtl's wing theory. (3 cred.; prereq. A.E. 100, 101, and M.&M. 25.) Ar.
120-121su. Airplane Design. Stress analysis of wings. Specifications. Performance and design calculations. Propellers. (7 cred.; prereq. A.E. 83, 102, and M.&M. 128.) Ar.
160su. Lighter-Than-Air Craft. Theory and design. Rigid and non-rigid types. Stresses. Performance. (3 cred.; prereq. A.E. 83, 102, and M.&M. 128.) Mr. Piccard.
190su. Seminar. Readings, reports, conferences and discussions. (1 cred.; prereq. 101.) Mr. Piccard.

ARCHITECTURE

SUMMER QUARTER

All regular courses in architectural design including Graphic Representation and certain courses in drawing, painting, and modeling will be offered in a special 1944 summer quarter extending approximately from June 13 to August 15. For further information consult the School of Architecture.

- Arch.4-5-6su. Graphic Representation. Projections, shades and shadows, perspective, and other processes involved in architectural drawing. (5 cred.; no prereq.; MTWThF VI-VIII; 402E.) Mr. Heath.

DESIGN

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

The object of 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.

§ Page numbers in course descriptions refer to the Bulletin of the Institute of Technology for 1942-43, where further information may be found.

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

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

AD-Isu.‡ Architectural Design, Grade I. (15 cred.; no prereq. MTThF I-IV, MTWThF VI-VIII; 402E.) Messrs. Arnal, Roy Jones, Robert Jones, Cerny.

AD-IIsu.‡ Architectural Design, Grade II. (15 cred.; prereq. AD-I; MTThF I-IV, MTWThF VI-VIII; 402E.) Messrs. Arnal, Roy Jones, Robert Jones, Cerny.

AD-IIIsu.‡ Architectural Design, Grade III. (15 cred.; prereq. AD-II; MTThF I-IV, MTWThF VI-VIII; 317E.) Messrs. Arnal, Roy Jones, Robert Jones, Cerny.

AD-IVsu.‡‡ Architectural Thesis, Grade IV. (15 cred.; prereq. AD-III; MTWThF I-VIII; 317E.) Messrs. Arnal, Roy Jones, Robert Jones, Cerny.

DRAWING, PAINTING, AND MODELING

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

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

Any of the following courses may be taken at any one of the following periods: T I-IV, W I-IV, Th I-IV.

DP-Isu.‡‡‡ Drawing and Painting, Grade I. Studies in graphic expression dealing with simpler composition in form and color. (2 to 4 cred.; 417E.) Mr. Burton.

DP-IIsu.‡‡‡ Drawing and Painting, Grade II. Studies in graphic expression dealing especially with composition in color. (2 to 4 cred.; prereq. DP-I or equiv.; 417E.) Mr. Burton.

DP-IIIsu.‡‡‡ Drawing and Painting, Grade III. Studies in graphic expression dealing especially with composition based on the human figure. (2 to 4 cred.; prereq. DP-II or equiv.; 417E.) Mr. Burton.

DP-IVsu.‡‡‡ Drawing and Painting, Grade IV. Studies in graphic expression dealing especially with advanced figure composition and mural decoration. (2 to 4 cred.; prereq. DP-III or equiv.; 417E.) Mr. Burton.

DP-Vsu. Drawing and Painting, Grade V. For graduate students only. Continuation of DP-IV. (2 to 4 cred.; prereq. DP-IV or equiv.; 417E.) Mr. Burton.

M-Isu.‡‡‡ Modeling, Grade I. Studies in plastic expression dealing with simpler compositions. (2 to 4 cred.; no prereq.; 405E.) Mr. Burton.

M-IIsu.‡‡‡ Modeling, Grade II. Studies in plastic expression dealing especially with the human figure. (2 to 4 cred.; prereq. M-I or equiv.; 405E.) Mr. Burton.

M-IIIsu.‡‡‡ Modeling, Grade III. For graduate students only. Continuation of M-II. (2 to 4 cred.; prereq. M-II or equiv.; 405E.)

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

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

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

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

CIVIL ENGINEERING

SUMMER QUARTER

(Hours and days to be arranged)

- 13su. Surveying. Lectures and field problems; differential and profile leveling; cross sections, circular curves, and adjustment of instruments. (3 cred.; prereq. 12.) Messrs. Cutler and Boon.
- 17su. Surveying. Short course including problems in chaining, transit and tape surveys; differential, profile leveling, computations and platting of notes, etc. Open to students other than civil engineers. (3 cred.; prereq. M.&M. 12.) Mr. Zelner.
- 22su. Railway Engineering. Study of the construction and maintenance of railway track and structures. Simple, compound, and spiral curves, and turnouts. (2 cred.; prereq. 21.) Messrs. Cutler and Boon.
- 23su. Advanced Surveying. The six weeks Summer Survey Camp at Cass Lake will not be operated this year. In its place field problems covering the same types of instruction will be given at the University. These problems will include base line, triangulation, precise levels, plane table, spiral curves, turnouts, stream measurements, observations, etc., computing and mapping. (3 to 6 cred.; prereq. 16 and 22.) Messrs. Cutler, Zelner, and Boon.
- 33su. Elementary Structural Design. Designing principles and methods. Complete designs and detail drawings of typical simple structures. (4 cred.; prereq. C.E. 32, M.&M. 128, Dr. 23.) Mr. Graves.
- 109su. Cadastral Surveying. Study of the newer methods of accurate surveys of property with geodetic control and with co-ordinates of property monuments. (2 cred.; prereq. 16.) Mr. Boon.
- 131su. Analysis of Bridges and Buildings. Analysis of bridges and buildings, with special emphasis on continuity. (2 cred.; prereq. 130.) Mr. Graves.
- 132su. Design of Bridges and Buildings. (2 cred.; prereq. 131.) Mr. Johnston.
- 137su. Structural Laboratory. Theoretical and experimental analysis of structural members and models. (2 cred.; prereq. 130, 141.) (Limited to 16 students each section.) Mr. Graves.
- 141su. Reinforced Concrete. Principles of reinforced concrete. Theory of beams, slabs, and columns, and the application to ordinary structures. (3 cred.; prereq. 33.) Mr. Johnston.
- 142su. Reinforced Concrete Design. Continuation of 141 with special emphasis on the practical features of the design of buildings, bridges, retaining walls, footings, etc. (3 cred.; prereq. 130, 141.) Mr. Johnston.
- 146su. Plain Concrete. Design and control of concrete mixtures. Practice in control tests of concrete and concrete materials. Lectures and laboratory work. (3 cred.; prereq. M.&M. 141.) (Limited to 16 students per qtr.) Mr. Johnston.
- 162su. Water Supply. Sources of water supply; characteristics of water; quantities and rates; quality of water; collection, distribution, and water treatment; test methods; selection of equipment. Laboratory problems in analysis and design. Inspection trips. (3 cred.; prereq. C.E. 161, M.&M. 129.) Messrs. Schroepfer, Cornell.
- 163su. Sewerage and Sewage Treatment. Sources and quantities of sewage; sanitary, storm and combined sewer systems; materials and methods of construction; sewer appurtenances; pumping equipment; physical, chemical, and biological characteristics of sewage. Disposal by dilution, domestic and industrial waste treatment. Laboratory problems in analysis and design. Inspection trips. (3 cred., prereq. 162.) Messrs. Schroepfer, Cornell.

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

DRAWING AND DESCRIPTIVE GEOMETRY

FIRST AND SECOND TERMS

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

SUMMER QUARTER

- 1su. Engineering Drawing. Introductory course in methods of representation including sketching, lettering, working drawings, conventions, standards, etc. (3 cred.; prereq. solid geometry; 8 hrs. per week.) Mr. Quaid.
- 2su. Engineering Drawing. A continuation course of Drawing 1su. (3 cred.; prereq. 1; 8 hrs. per week.) Mr. Williams.
- 3su. Descriptive Geometry. Elementary course in the methods of representation, correlated in part with algebraic geometry. (Lectures, demonstrations, and drafting; 3 cred.; prereq. Draw. 2 and M.&M. 11; 8 hrs. per week.) Mr. Eggers.
- 7su. Engineering Drawing. (Chem. and chem. engr.) (3 cred.; prereq. solid geometry; 8 hrs. per week.) Mr. Springer.
- 8su. Descriptive Geometry. (Chem. and chem. engr.) (3 cred.; prereq. 7; 8 hrs. per week.) Mr. Bullen.
- 10su. Solid Geometry. Lines and planes in space, surfaces, spherical geometry. (No cred. for tech. students; 3 cred. for others; no prereq.; 4 hrs. per week.) Mr. Palmer.
- 21su. Drafting. (Civil engr.) The application of descriptive geometry to drafting room problems including working drawings. (2 cred.; prereq. 3; 6 hrs. per week.) Mr. French.
- 22su. Structural Detailing. (Civil engr.) Detail, assembly, and construction drawings of steel members and simple structures. (2 cred.; prereq. 21; 6 hrs. per week.) Mr. Myers.
- 23su. Structural Detailing. (Civil engr.) Drafting problems in general construction work including earth work, wood, steel, and concrete. (2 cred.; prereq. 22; 6 hrs. per week.) Mr. Myers.
- 26su. Drafting. (Elect. engr.) Application of descriptive geometry to drafting room problems. Working drawings and tracing. (2 cred.; prereq. 3; 6 hrs. per week.) Mr. Potter.
- 28su. Drafting. (Aero. engr.) Application of descriptive geometry to drafting room problems, working drawings and tracing. (2 cred.; prereq. 3; 6 hrs. per week.) Mr. Schuck.
- 29su. Drafting. (Aero. engr.) Detail, assembly, and layout drawings. Standard practices in aircraft industry, tolerances, and allowances. (2 cred.; prereq. 28; 6 hrs. per week.) Mr. Schuck.

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

ELECTRICAL ENGINEERING

SUMMER QUARTER

(Hours and days to be arranged)

- 44-45su. Electric Power. (3 cred. per qtr.; sr. chem. engr.; prereq. Phys. 9.) Mr. Saunders.
- 66su. Elements of Communication. (2 cred. per qtr.; prereq. reg. in 111-113-115-(64-65.) Mr. Nielsen.
- 115su. Junior Electrical Engineering. (3 cred. per qtr.; prereq. 111, 112, 113, 114.) Mr. Muckenhirn.
- 116su. Junior Electrical Engineering Laboratory. (1 cred. per qtr.; prereq. reg. in 113-115. Lab. given alternate weeks.) Mr. Muckenhirn.
- 119su. Engineering Electronics. (3 cred. per qtr.; prereq. 111, 112, and 117. Lab. given in alternate weeks.) Mr. Muckenhirn.
- 125su. Senior Electrical Engineering. (3 cred. per qtr.; prereq. 115, 116, and 119.) Mr. Muckenhirn.
- 126su. Senior Electrical Engineering Laboratory. (2 cred. per qtr.; prereq. 116 and reg. in 121-123-125.) Mr. Muckenhirn.
- 136su. Electrical Design. (2 cred. per qtr.; prereq. 125.) Mr. Saunders.
- 138su. Power Systems. (3 cred. per qtr.; prereq. reg. in 121, 123, or 125.) Mr. Caverley.
- 163su. Radio Communication. (3 cred. per qtr.; prereq. reg. in 121-123-125.) Mr. Webb.
- 166su. Electric Communication. (4 cred. per qtr.; prereq. 66.) Mr. Nielsen.
- 169su. Radio Design. (3 cred.; prereq. reg. in 163.) Mr. Webb.

MATHEMATICS AND MECHANICS

SUMMER QUARTER

- 9su. Higher Algebra (High School). Fundamental rules, fractions, linear simultaneous equations, graphs, theory of exponents, surds, complex quantities, quadratic equations, numerical exercises. (Entrance credit for students entering the Institute of Technology; for other students, 5 cred.; no prereq.; hrs. ar.) Mr. McEwen.
- 11su. College Algebra. Review of fundamental operations, factoring, fractions, linear simultaneous equations, exponents, surds, complex numbers, and quadratic equations. Theory of quadratic equations, ratio, proportion, variation, determinants, binomial theorem, progressions, theory of equations, higher numerical equations, partial fractions, and infinite series. (5 cred.; prereq. 9 or equiv.; hrs. ar.) Mr. Saunders.
- 12su. Trigonometry. Graphical representation of functions, computation by logarithms and slide rule. Trigonometric functions, plane right triangles, reduction formulas, fundamental relations, addition formulas, double angles, half angles, identities and equations, inverse functions, oblique triangles, de Moivre's theorem, spherical right triangles. (5 cred.; prereq. 11; hrs. ar.) Mr. Lesch.
- 13su. Analytic Geometry. Rectangular co-ordinate systems, locus and equation, straight line, circle, parabola, ellipse, hyperbola, transformation of co-ordinates and simplification of equations. Polar co-ordinates, higher plane curves, tangents, normals, empirical equations, solid analytic geometry. (5 cred.; prereq. 11 and 12; hrs. ar.) Mr. Doeringsfeld.
- 24su. Calculus I: Differential. Limit, derivative, simple application of derivative, maxima and minima, differentials, rates, radius of curvature, indeterminate forms, partial differentiation, the differential as an approximation, series, expansion of functions. (5 cred.; prereq. 13; hrs. ar.) Mr. Stavnes.

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

- 25su. Calculus II: Integral. Integration of standard elementary forms, rational fractions, by substitution, by parts; trigonometric integrals, definite integral, integration as a process of summation; geometric applications, liquid pressure, work, centroids, moments of inertia, double and triple integrals. (5 cred.; prereq. 24; hrs. ar.) Mr. Koehler.
- 26su. Technical Mechanics: Statics. Concurrent force systems, parallel forces, couples, center of gravity, statics of rigid bodies, graphical methods, friction, work, theory of moment of inertia. (5 cred.; prereq. 25; hrs. ar.) Mr. Herrick.
- 127su. Technical Mechanics: Dynamics. Kinematics of the particle and rigid body, theorem of Coriolis, particle dynamics, dynamics of a rigid body in plane motion, the energy equation, impulse and momentum, applications to technical problems. (5 cred.; prereq. 26; hrs. ar.) Mr. Wilcox.
- 85su. Strength of Materials. (Chem. engr. and prebus.) Mechanical and elastic properties of materials of construction, beams, shafts, columns, combined stresses, dynamic stresses. (3 cred.; prereq. 84; hrs. ar.) Mr. Priester.
- 87su. Materials Testing Laboratory. (Chem. engr. and prebus.) Investigation of the physical properties of various metals and engineering materials (steel, cast iron, wood, brick, etc.). Standard methods of testing. (1 cred.; prereq. 85 or reg. in 85; hrs. ar.) Mr. Priester.
- 128su. Strength of Materials. Mechanical and elastic properties of materials of construction; stresses and deformations in beams, shafts, and columns; stresses in statically indeterminate structures; combined stresses. (5 cred.; prereq. 26; hrs. ar.) Mr. Miller.
- 129su. Hydraulics. Laws of equilibrium of fluids, flow through orifices and over weirs, pressure and flow through tubes and pipes, flow in conduits and rivers, dynamic pressure of water, elementary principles of turbines and pumps. (4 cred.; prereq. 26; hrs. ar.) Mr. DeLapp.
- 141su. Materials Testing Laboratory. Investigation of the physical properties of various metals and engineering materials (steel, cast iron, wood, cement, brick, etc.). Standard methods of testing. (2 cred.; prereq. 128 or reg. in 128; hrs. ar.) Mr. Miller.
- 143su. Hydraulics Laboratory. Experimental and demonstrational work. Pressure head, Peizometer tubes, gages, stability of flotation, Bernoulli's theorem. Venturi meter, flow through orifices, over weirs, and through pipes. Open channels, gaging, impact on vanes, pumps, and hydraulic machines. (1 cred.; prereq. 129 or reg. in 129; hrs. ar.) Mr. DeLapp.
- 151su. Differential Equations. Differential equations and their solutions. First order and first degree, first order and higher degree, singular solutions; total differential equations, linear differential equations, miscellaneous methods system of simultaneous equations, integration in series. (3 cred.; prereq. 25; hrs. ar.) Mr. Turritin.

MECHANICAL ENGINEERING

FIRST TERM

(Hours and days to be arranged)

- 1su.‡ Elementary Woodworking. (Ind.Ed.) Fundamental operations in bench practice layout and assembly of unit parts. Manipulation and care of hand tools. Elementary wood turning, demonstration and practice. Not an engineering elective. (2 cred.; no prereq.) Mr. Richards.

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

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

- 2su.‡ Machine Woodworking. (Ind.Ed.) Operation and setting up of woodworking machinery. Care and maintenance of cutting tools and power equipment. Advanced wood turning, demonstrations and practice. Not an engineering elective. (2 cred.; no prereq.) Mr. Richards.
- 3su.‡ Wood Finishing and Furniture Construction. (Int.Arch. and Ind.Ed.) Identification and use of woods and finishing materials, wood finishing methods, color blending of stains and fillers, use of undercoats, lacquers, paints, etc.; and their application to wood surfaces. Furniture construction and design of period, modern, and upholstered furniture. Preparation and assembly of woods, textiles, upholstery, and finishing materials. Inspection trips. Not an engineering elective. (2 cred.; no prereq.) Mr. Richards.
- 4su.‡ General Woodwork. (Prebus.) Study of the principles involved in the construction of articles made of wood and wood products. Uses and compositions of paints, varnishes, stains, and wood preservatives. (2 cred.; no prereq.) Mr. Richards.
- 7su.‡ Nonmetal Manufacturing. Methods and processes of manufacturing goods from materials such as wood, glass, plastics, asbestos, bakelite, hard rubber, and other synthetic substances. (3 cred.; prereq. 3, 4, or 5.) Mr. Richards.
- 8su.‡ Foundry Practice. (Ind.Ed.) Theory and practice in melting iron, brass, bronze, and aluminum. Practice in making cores and molds for ornamental and commercial castings. Not an engineering elective. (2 cred.; no prereq.) Mr. Holtby.
- 9su.‡ Foundry Practice. Theory and practice in melting, alloying, and casting ferrous and nonferrous metals. Theory and practice of foundry control methods, risers, feeders, gates, and pattern design. Practice in making cores and molds in relation to part design. Problems and reports. (2 cred.; prereq. Chem. 4 or 14.) Mr. Holtby.
- 12su.‡ General Metal Work. (Ind.Ed.) Working various metals. This course is designed to meet the needs of teachers of elementary forging and art metal courses. Projects designed for individual needs. Not an engineering elective. (2 cred.; no prereq.) Mr. Hughes.
- 112su.‡ Plastics. Materials, equipment and methods used in the fabrication of plastic products. (3 cred.; no prereq.) Mr. Holtby.

SECOND TERM

(Classes may be arranged as requested)

SUMMER QUARTER

(Hours and days to be arranged)

- 5su.‡ Pattern Practice. Study of the principles and uses of metal and wooden patterns, core boxes, and sweeps for the production of metal castings. Industrial practices and conventions. Inspection trips. (2 cred.; Chem. 5 or 15, and Dr. 2.) Mr. Richards.
- 13su.‡ Forging, Welding, and Heat Treating. Theory of production and working of metals; operation of furnaces; thermit, electric arc, oxyacetylene, and spot welding. (2 cred.; prereq. Chem. 5 or 15, and Dr. 2.) Mr. Hughes.
- 18su.‡ Machine Shop Practice. (Aero.E.) Fundamental operations on lathes, shaper, drill press, milling machine, boring machine, and grinder, turret lathe operation, polishing and buffing, gear cutting and tool grinding, production methods, routing, and machine selection. (2 cred.; prereq. 5, 13.) Mr. Crowder.

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

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

- 24su. Elements of Machine Design, Design of beams, shafting, columns, screw fastenings, springs, friction clutches, and brakes. Factor of safety. Stresses due to sudden applied, repeated, and reversed loads. (3 cred.; prereq. M.E. 23, M.&M. 128.) Mr. Larsen.
- 26su. Mechanism and Kinematics. (E.E., Aero.E., and Ag.E.) Kinematics of machines. Levers, linkwork, flexible connections, gearing, screws, cams, epicyclic trains. Graphical studies of velocities. Motion: intermittent, parallel, quick return, and escapements. (3 cred.; prereq. M.&M. 24.) Mr. Holtby.
- 34su. Mechanical Laboratory. Calibration of tachometers, pyrometers, steam flow meters. Valve setting. Flow of steam through orifices. Test of steam trap, surface condenser, simple steam engines. Inspection trips. (2 cred.; prereq. 33.) Mr. Eustis.
- 50su. Auto and Airplane Engines. Principles and types. Electrical systems. Lubrication and cooling. Carburetors. Accessories. (3 cred.; soph.) Mr. Lindeman.
- 72su.‡ Machine Shop Practice. Care and operation of turret lathes, shapers, milling, and grinding machines. Machinability determinations. Operation sheets for the production of complete units. Inspection trips. (2 cred.; prereq. 71.) Mr. Crowder.
- 132su. Thermodynamics. Critical study of the properties of gases and vapors and the fundamental laws for conversion of heat energy into mechanical energy in steam engines, gas engines, air compressors, refrigeration machines, steam turbines, etc. (3 cred.; prereq. M.&M. 25 and Phys. 8.) Mr. English.
- 142su. Heat-Power Engineering. Study of fuels and combustion, stokers, furnaces, boilers, superheaters, economizers, feed water treatment, etc. Theory, practice, and economics relating to heat engines and steam generating equipment, including the auxiliary units; air, water, and steam heat exchangers and purifiers, pumps, fans, etc. (3 cred.; prereq. 132.) Mr. Shoop.
- 149su. Advanced Steam Laboratory. Tests of steam turbines, uniflow and compound steam engines, condensers, evaporators, and vacuum pumps. Tests of compound steam pump. Air compressor, boiler, superheater, and power plant. Studies of fluid flow meters and air-conditioning apparatus. (2 cred.; prereq. 132 and 35, 142 or reg. in 142.) Mr. Lee.
- 150su. Internal Combustion Engines. Study of the thermodynamics and combustion processes of real gas and vapors in Otto, Diesel, and compression ignition engines; volatile fuels, mixtures of real gases and vapors; cylinder pressures, flame temperatures, combustion phenomena; heat losses, real cycle efficiencies. (3 cred.; prereq. 131.) Mr. Murphy.
- 151su. Advanced Internal Combustion Engines. Special reference to automobile, truck, and airplane engines. Theoretical consideration of fuels, combustion, detonation, lubrication, supercharging, carburetion, and fuel injection. Recent developments in automotive and airplane engines. (3 cred.; prereq. 150.) Mr. Robertson.
- 154su. Design of Airplane Engines. Study of the designs of radial and in-line aircraft engines. Drawing room problems, including graphical and analytical calculations of stresses in moving parts. Combined polar diagrams of bearing loads, etc. (2 cred.; prereq. 27, 150.) Mr. Murphy.
- 158su. Aero-Engine Testing. Use of modern instruments for testing gasoline, Diesel, and aircraft engines. Use of dynamometers and torque stands in determining engine performance. (2 cred.; prereq. 150 or reg. in 150.) Mr. Murphy.
- 159su. Internal Combustion and Engine Laboratory. Tests of gasoline, semi-Diesel, and Diesel engines. Power plant units and automotive engines. (2 cred.; prereq. 150 or reg. in 150.) Mr. Laitala.

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

- 169su. Heating and Ventilation Laboratory. Tests of heating, ventilation, and air conditioning equipment. The determination of air qualities as required for comfort and for specific industries. Tests and studies of complete installation. (2 cred.; prereq. 35, 160 or reg. in 160.) Mr. Lund.
- 174su. Motion and Time Study Laboratory. Training in motion and time study as a tool in industrial management. Wage systems, rate setting. Particular emphasis on cost reduction due to better methods. Laboratory problems taken directly from local industries. (2 cred.; prereq. M.E. 72, 171 or B.A. 89, or reg. in M.E. 171.) Mr. Laitala.
- 191-192su. Seminar. Reading of assigned articles in current technical press. Classroom presentation of principal features of assigned articles. (1 cred. per qtr.; sr.) Mr. Rowley.

INSTITUTE OF TECHNOLOGY

SCHOOL OF CHEMISTRY§

An *asterisk* (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See page 23.)

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

INORGANIC CHEMISTRY

FIRST TERM

- 1su.‡ General Inorganic Chemistry. (Agr., arch., predent., premed.) Study of the general laws of chemistry and of the nonmetals and metals and their compounds. (4 cred.; no prereq.; lect. MTWThFS III, W VI, 100C; lab. MTThF VI-VIII, 290C.) Mr. Klug.
- 4su.‡ General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals and their compounds. More intensive than Course 1. (4 cred.; prereq. high school chem.; lect. MTWThFS II, 325C; lab. MTThF VI-VII, 290C.) Mr. Reyerson.
- 11su.‡‡ Semimicro Qualitative Analysis. Laboratory work in systematic qualitative analysis with lectures on solutions, ionization, chemical and physical equilibria, oxidation and reduction, etc. (4 cred.; prereq. 2, 5, 7, 10, or 15; lect. MTWThF IV, W VI; 111C; lab MF, VI-IX; 290C.) Mr. Maynard.

SUMMER QUARTER

- 4su.‡ General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals and their compounds. More intensive than Course 1. For engineers, etc. (4 cred. per qtr.; prereq. high school chemistry; lect. TThS IV, 100C; quiz T I, Th VI-IX, 110C.) Mr. Heisig.
- 6su.‡§ General Inorganic Chemistry. Study of the general laws of chemistry and of nonmetals, metals, and their compounds. (5 cred.; no prereq.; lect. MWF II, 410C; lab. TTh I-III and S I-II, 290C.) Mr. Maynard.
- 9su.‡ General Inorganic Chemistry. Study of general laws of chemistry and of nonmetals and their compounds. More intensive than Courses 6 and 7. (5 cred.; prereq. high school chemistry; lect. MWF II, 410C; lab. TTh I-III or TThS I-II, 290C.) Mr. Maynard.
- 12su.‡‡ Semimicro Qualitative Analysis. Laboratory work in systematic qualitative analysis with lectures on solutions, ionization, chemical and physical equilibria, oxidation and reduction, etc. (5 cred.; prereq. 7 or 10; lect. MWF VI, 225C; lab. MWF VII-VIII, 290C.) Mr. Pervier.
- 13su.‡‡ Semimicro Qualitative Analysis. Laboratory work in systematic qualitative analysis with lectures on solutions, ionization, chemical and physical equilibria, oxidation, reduction, etc. (5 cred.; prereq. 12; lect. MWF VI, 215C; lab. M VII-VIII, WF VII-IX, 210C.) Mr. Barber.

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

‡‡ A fee of \$2.40 is charged for this course.

§ Freshmen entering the School of Chemistry without credit in high school chemistry must register in this section and for two additional hours; I-II S, I-II S an both 6 and 7.

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

- 14su.‡ General Inorganic Chemistry. (Engineers and miners without high school chemistry.) General laws of chemistry; the nonmetals, the metals, and their compounds. (4 cred.; no prereq.; lect. TThS IV, 111C; lab. TTh VI-VII, 290C.) Mr. Klug.
- 103su.* Advanced Inorganic Chemistry. A discussion of selected topics in theoretical inorganic chemistry. The Chemistry of the Solid State. (3 cred.; prereq. Anal. Chem. 1, 2, Org. Chem. 52 or 55; lect. TThS III; 111C.) Mr. Klug.
- 109su.*‡ Synthetic Inorganic Chemistry. Methods of preparation and purification of inorganic compounds of special interest. Current literature. (3 to 5 cred.; prereq. 13 or permission of instructor; lect. and lab. hrs. ar.) Mr. Heisig.
- 301su. Research in Inorganic Chemistry. (Cred. and hrs. ar.) Messrs. Sneed, Reyerson, Barber; Klug, Maynard.

SECOND TERM

- 2su.‡ General Inorganic Chemistry. (Agr., arch., predent., premed.) Study of the general laws of chemistry and of the nonmetals and metals and their compounds. (4 cred.; prereq. 1; lect. MTWThF II, W VI, 100C; lab. MTThF VI-VII.) Mr. Klug.
- 5su.‡ General Inorganic Chemistry. Study of the general laws of chemistry and of the nonmetals and their compounds. More intensive than 2. (4 cred.; prereq. 4; lect. MTWThF II, W VI, 325C; lab. MTThF VI-VII, 290C.) Mr. Reyerson.

ANALYTICAL CHEMISTRY

FIRST TERM

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

SECOND TERM

- 7su.‡ Quantitative Analysis (Premed.) Introductory course covering the general principles and methods of quantitative analysis, both gravimetric and volumetric. Typical problems are assigned and attention given to proper laboratory practice. (4 cred.; prereq. qual. anal.; lect., rec., quiz TTh V-VI, 315C; lab. MWF V-VIII, TTh VII-VIII, 310C.) Mr. Geiger.

FIRST AND SECOND TERMS

- 1su.‡ Quantitative Analysis (Gravimetric). Introductory course covering the general principles and methods of gravimetric analysis. Typical problems are assigned and attention given to proper laboratory practice. (5 cred.; prereq. qual. anal.; lect. rec. quiz MWF VI, 410C; lab. MWF VI-IX; 310C.) Mr. Geiger.

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

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

ORGANIC CHEMISTRY

FIRST TERM

- 1su.†† Elementary Organic Chemistry. (Premed., predent., pharm.) Discussion of important classes of organic compounds, both aliphatic and aromatic. Laboratory work includes the preparation of typical substances. (4 cred.; prereq. 11 or 12; lect. MTWThF I, 325C; rec. TTh II, 315C; lab. MWF II-IV, 390C; lab. conference TTh III, ar. C.) Mr. Lauer and assistants.
- 110su.†† Organic Qualitative Analysis. Reactions of typical functional groups, identification of pure organic compounds, separation and identification of constituents of mixtures. (5 cred.; prereq. 156 and 159 or equiv.; lect. MWF IV, 315C; 15 hrs. of lab. work ar.) Mr. Koelsch and assistants.
- 130su.‡ Organic Quantitative Analysis. Methods of proximate and ultimate analysis of organic compounds, with special attention to semimicro methods. (2 or 3 cred.; prereq. 156 and 159, Anal. Chem. 1 and 2 are advisable; hrs. ar.) Mr. Lauer and assistants.
- 140su. Aromatic Compounds. Discussion of the chemistry of typical aromatic compounds, including derivatives of benzene, naphthalene, anthracene, phenanthrene, and other polynuclear hydrocarbons, together with a consideration of certain heterocyclic compounds which show aromatic character. The properties of these compounds will be illustrated by examples chosen from the sterols and the alkaloids. (3 cred.; prereq. 156 and 159; MTWThF III; ar. C.) Mr. Koelsch.
- 301su. Research in Organic Chemistry. (Cred. ar.; prereq. 110; hrs. ar.) Mr. Lauer, Mr. Koelsch.

SECOND TERM

- 2su.†† Elementary Organic Chemistry. (See description for 1su.) (4 cred.; prereq. 1; lect. MTWThF I, 325C; rec. TTh II, 215C; lab. MWF II-IV, 390 C; lab. conference TTh III; ar.) Mr. Arnold and assistants.
- 139su.‡ Advanced Organic Chemistry Laboratory Work. Selected laboratory problems of an advanced nature, including some original work. Ability to read German is assumed. (2 or 3 cred.; prereq. 156 and 159; hrs. ar.) Mr. Arnold and assistants.
- 302su. Research in Organic Chemistry. (Cred ar.; prereq. 110; hrs. ar.) Mr. Arnold.

FIRST AND SECOND TERMS

- 55su.§ Elementary Organic Chemistry (lectures). (All except premed., predent., pharm.) Discussion of the important classes of organic compounds, both aliphatic and aromatic, together with some heterocyclic compounds. (3 cred.; prereq. 54; for students majoring in chem.; lect. MWF III, 100C; quiz Th III, 325C.) Mr. Carlin and assistants.
- 58su.‡§ Elementary Organic Chemistry Laboratory Work. (All except premed., predent., pharm.) Laboratory work to accompany 55su. (2 cred.; prereq. 54 and 57; must be preceded or accompanied by 55; for students majoring in chem.; lab. conference S III, 325C; lab. (1) VII-IX T, VI-VIII Th; (2) II-IV T, VI-VIII T.) Mr. Carlin and assistants.

† To receive credit for any part of this course a student must complete both 1 and 2.

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

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

‡§ To receive credit for any part of this course a student must complete both 55 and 58.

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

116su. Polymerization. Preparation and properties of synthetic high polymers; addition and condensation polymerization; polymer molecular weight distribution and its determination; polymerization mechanisms and the structure of polymers. (3 cred.; prereq. 156 and 159 or permission of instructor; MWF I, 315C.) Mr. Carlin.

PHYSICAL CHEMISTRY

SUMMER QUARTER

102su. Physical Chemistry. General survey of the subject. (3 cred. per qtr.; prereq. 101; lect. MWF IV, 325C; rec. (secs. 1, 2), 325C, 225C.) Mr. Allen, Mr. MacDougall.

105su.†† Physical Chemistry Laboratory. (1 or 2 cred. per qtr.; prereq. 101 and 104; lab. conf. (for students registered for 2 cred.) (1) W VI, 410C, (2) T VI, 410C; lab. (1) M VI-VIII, W VII-VIII, 190C, (2) T VII-VIII, Th VI-VIII, 190C, (3) F VI-VIII, 190C.)

107su.†† Elementary Physical Chemistry (Premed.). (6 cred. per qtr.; prereq. two years of college chemistry; one year of college physics; lect. MWFS I, 215C; rec. F IV, 215C; lab. TTh I-III, 190C.) Mr. Crawford, Mr. Allen.

301-302su. Research in Physical Chemistry. Mr. MacDougall, Mr. Crawford.

CHEMICAL ENGINEERING

FIRST TERM

(June 12-June 15)

102su.‡ Unit Operations. Continuation of 101 with discussions on filtration, heat transfer, evaporation, humidification, and air conditioning and drying. Their applications including economic balance and the solution of problems. (6 cred.; prereq. 101; lect. MWF I, 111C; rec., Sec. 1 TThS I, 111C; Sec. 2 TThS I, 410C; lab., Sec. 1 W VI-IX, 90C; Sec. 2 T II-V, 90C.) Mr. Stoppel, Mr. Pike.

118su. Chemical Engineering Equipment Design. Fundamental principles in the design of simple chemical engineering equipment. (3 cred.; prereq. 103; rec. MWF II, 115C; lab. W VI-IX, 445C.) Mr. Montonna.

121su. Chemical Engineering Economics. The economic and business considerations controlling chemical engineering industries and their statistical analysis. Economic factors affecting plant location, layout, and design. Unit operation costs. Principles of management, operation, and control. (3 cred.; prereq. 131; TThS II; 115C.) Mr. Montonna.

132su.† Organic Technology. Similar to 131 but covering organic field. Destructive distillation of coal and wood, petroleum oils, paper, organic processes, synthetic products, vegetable and animal oils, fats, waxes, soap, sugar, starch, etc. (3 cred.; prereq. for chem. engrs. Chem. Engr. 103 and 131; 4 cred. per qtr.; prereq. for chem. Org. Chem. 52; MTWFS I; 225C.) Mr. Mann.

151su.‡§ Chemical Manufacture (Inorganic). Manufacture of technical products on a scale large enough to afford data for the determination of operating conditions and costs of manufacture. Use of semi-plant scale equipment. Technical trade journals used. (Laboratory, 3 or more cred.; prereq. 103, 131; lab., Sec. 1 MT VI through 10:00 p.m., 90C; Sec. 2 ThF VI through 10:00 p.m., 90C.) Mr. Mann, Mr. Ballard, Mr. Pike.

† Chemists receive 4 credits in Organic Technology as they do not take Unit Operations.

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

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

‡ Each laboratory section is limited to 16 students.

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

152su.‡§ Chemical Manufacture (Organic). Similar to 151 but covering the unit organic processes. (Lab. 3 or more cred., prereq. 103, 131; lab. Sec. 1 MT VI through 10:00 p.m., 90C; Sec. 2 ThF VI through 10:00 p.m., 90C.) Mr. Stoppel, Mr. Hougen, Mr. Madden.

SECOND TERM

(July 17-August 19)

Same program as offered first term as listed above.

THIRD TERM

(August 21-September 30)

151su.‡§ Chemical Manufacture (Inorganic). Manufacture of technical products on a scale large enough to afford data for the determination of operating conditions and costs of manufacture. Use of semi-plant scale equipment. Technical trade journals used. (Lab. 3 or more cred., prereq. 103, 131; lab. MTWThF I-IX, 90C, S I-IV, 90C.) Mr. Mann, Mr. Ballard, Mr. Pike.

152su.‡§ Chemical Manufacture (Organic). Similar to 151 but covering the unit organic processes. (Lab. 3 or more cred.; prereq. 103, 131; lab. MTWThF I-IX, 90C; S I-IV, 90C.) Mr. Montonna, Mr. Hougen, Mr. Madden.

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

§ Each laboratory section is limited to 16 students.

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

GENERAL INFORMATION

Agriculture offers a limited number of courses to college undergraduates interested in this field, and a larger number of courses from most of the agricultural divisions for graduate students. For high school teachers of agriculture a special group of agricultural courses is arranged which are supplementary to the courses offered by the Department of Agricultural Education (see College of Education).

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

GRADUATE STUDY

Opportunity is offered in many divisions of the College of Agriculture, Forestry, and Home Economics for graduate study either for the first six-week term of the Summer Session or for the entire session of eleven weeks. In some divisions both courses and thesis work may be carried for the entire session. In other divisions thesis or course work only may be pursued through the Summer Session. Information concerning graduate work during the summer, in any division, may be obtained from the head of the division. 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.

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.

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 23.)

AGRICULTURAL BIOCHEMISTRY

FIRST TERM

4su. Introduction to Organic and Biochemistry. (Page 66§) (5 cred.; soph., jr., sr.; prereq. Inorg. Chem 1 and 2 or 4 and 5; MTWThF I, II; 113SnH.) Mr. Greenwood.
203asu.*† Research Problems. (Page 26†) (2 to 5 cred.; grad.; prereq. permission of instructor; ar.) Mr. Palmer, Mr. Geddes, Miss Kennedy.

† Page numbers in course descriptions refer to the Graduate School Bulletin for 1940-42, where further information may be found.

† This course requires the purchase of a laboratory "yellow card" for \$5 at the cashier's office, University Farm.

§ Page numbers in course descriptions refer to the College of Agriculture, Forestry, and Home Economics Bulletin for 1942-44, where further information may be found.

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

SECOND TERM

203bsu*‡ Research Problems. (Page 26†) (Second part of 203asu; 2 to 5 cred.; grad.; prereq. 203a; ar.) Mr. Palmer, Mr. Geddes, Miss Kennedy.

AGRICULTURAL ECONOMICS

FIRST TERM

106su.‡ Enterprise Selection and Adaptation. A study of the principles involved in the choice and combination of crop and livestock enterprises. Special attention will be given to adjustments in the farm organization to meet wartime production needs in the face of labor, materials, and equipment scarcities. (1 cred.; jr., sr., grad.; prereq. 2; ar.; 312HH.) Mr. Pond.

200su. General Seminar in Agricultural Economics. (Page 65†) (Grad.; ar.) Mr. Jesness and staff.

AGRICULTURAL EDUCATION

For list of courses in Agricultural Education see courses listed under the College of Education, page 91.

AGRICULTURAL ENGINEERING

FIRST TERM

22su.‡ Agricultural Machinery Laboratory. Laboratory study of common farm machines with special emphasis on repairs and adjustment. (1 cred.; no prereq.; TTh VII, VIII, IX; 105 and 37En.) Mr. Strait.

41su.‡ Metal Work. Instruction and practice in mechanical work pertinent to use and repair of farm equipment. Cold metal work, soldering, pipe fitting and valves, oxy-acetylene welding, brazing, cutting, electric arc welding. Students may concentrate on subject matter of most interest to them. (2 to 4 cred.; no prereq.; lect. TWThF VI; lab. ar.; 103 and 20En.) Mr. Dent.

AGRONOMY AND PLANT GENETICS

FIRST AND SECOND TERMS

AGRONOMY

201su.* Research in Farm Crops. (Page 29†) (3 to 9 cred.; prereq. 121, 123; grad.; ar.) Mr. Wilson, Mr. Arny.

PLANT GENETICS

241su.* Research in Plant Genetics. (Page 29†) (Grad.; ar.) Mr. Hayes, Mr. Burnham, Mr. Immer.

244su. Laboratory Methods in Plant Breeding. (Page 30†) (3 cred.; grad.; ar.) Mr. Immer.

ANIMAL AND POULTRY HUSBANDRY

FIRST AND SECOND TERMS

213su.* Research in Animal Husbandry. (Page 33†) (1 to 3 cred.) Mr. Peters, Mr. Ferrin, Mr. Winters, Mr. Harvey.

214su.* Research in Poultry Husbandry. (Page 33†) (1 to 3 cred.) Mr. Sloan.

† Page numbers in course descriptions refer to the Graduate School Bulletin for 1940-42, where further information may be found.

‡ Offered June 14 to July 1. Will be repeated July 3-22 if demand warrants.

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

DAIRY HUSBANDRY

FIRST TERM

208su. Research in Dairy Production. (Page 59†) (Prereq. preliminary graduate work.) Mr. Fitch, Mr. Petersen, Mr. Gullickson.

209su. Research in Dairy Manufacturing. (Page 59†) (Prereq. preliminary graduate work.) Mr. Combs, Mr. Coulter.

SECOND TERM

210su. Research in Dairy Production. Same as 208su, first term.

211su. Research in Dairy Manufacturing. Same as 209su, first term.

ENTOMOLOGY AND ECONOMIC ZOOLOGY

FIRST AND SECOND TERMS

55su. 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. (9 hrs. lab.; 3 cred.; jr., sr.; ar.) Mr. Mickel.

197su. Introduction to Research. Preparation for investigational work in lines of entomology. Advanced laboratory, field, and library work; training in the preparation of bibliographies and manuscripts; special problems. (2½ or more cred.; jr., sr., grad.; prereq. 9 hrs. ent., and other prescribed work; ar.; Ad.) Mr. Granovsky, Mr. Mickel, Mr. Tanquary, Mr. Hodson, Mr. Swanson.

204su. Research in Entomology. Ample opportunity for research work in various phases of entomology will be afforded properly qualified students. This work will be individual. Students who plan to undertake special problems should correspond with the division relative to methods of collection and preparation of material. (3 or more cred.; grad.; ar.) Mr. Granovsky, Mr. Mickel, Mr. Tanquary.

FORESTRY

Due to the lack of transportation facilities and low registration, freshmen courses will not be offered at Itasca Park during the Summer Session of 1944. However, if the demand warrants, the courses will be resumed in 1945.

HOME ECONOMICS

FIRST TERM

4su. Clothing Construction B. Laboratory practice in costume modeling; preparation of dress form; application of tailored technique to silk, rayon, or wool fabrics; garments constructed will include a remodeling problem. (3 cred.; soph., jr.; prereq. 3, 21. MWThF VI-VII-VIII; 305HE.) (Limited to 24 students.) Miss Brew.

27su. Related Art Problems. Problems worked out relating to costume and house furnishing design. (3 cred.; jr., sr.; prereq. 21; MWThF VI-VII-VIII; 112HE.) (Limited to 24 students.) Miss V. Goldstein.

† Page numbers in course descriptions refer to the Graduate School Bulletin for 1940-42, where further information may be found.

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

- 31su. Introduction to Nutrition. The application of nutrition principles to food selection. Includes typical food problems such as buying meals, and the relation of food to the promotion and maintenance of health. (3 cred.; no prereq.; MTWThF VII; ar.) Miss Leichsenring.
- 86su. Home Management: Operation and Maintenance Laboratory. Actual experience in a home management house with various household management problems including the care and development of the child of preschool age. (4 cred.; prereq. 40, 17, 85, or 185 or parallel, H.E.Ed. 90, or C.W.40.) (Limited to regular undergraduate home economics students at the University of Minnesota.) Miss Studley, Miss Jeary.
- 116su. Family Clothing Problems. A consideration of the present-day clothing problems of the family; problems in buying clothing; governmental controls of clothing production including the simplification of clothing; the sizing of garments and patterns; recent developments in the choice of clothing for specific uses such as work clothing for women, infants, and children's clothing. (3 cred.; jr., sr., grad.; prereq. 1, 50; MTWThF IV and 1 hr. ar.; 114HE.) Miss Brew.
- 120su. Art History and Appreciation. The historical development of painting, sculpture, architecture, decoration, furniture, and costumes, studied with special emphasis on design and influence upon modern styles. (3 cred.; jr., sr., grad.; MTWThF IV and 1 hr. ar.; 313HE.) Miss V. Goldstein.
- 142su. Experimental Cookery. An intensive study of problems in foods and food preparation especially those affected by war conditions. Individual laboratory problems. (3 cred.; jr., sr., grad.; prereq. 40 or equiv., Agr.Biochem. 4 or equiv.; MTWThF I-II and 2 hrs. ar.; 107HE.) (Limited to 12 students.) Miss Donelson.
- 146su. Special Food Problems. Individual problems in foods and food preparation. (3 cred.; prereq. 142 or equiv.; sr., grad.; MWThF VI-VII-VIII; 107HE.) (Limited to 12 students.) Miss Donelson.
- 171su. Child Nutrition. Lectures, discussions, and field work dealing with the principles of child nutrition and with the formation of desirable food habits. (3 cred.; jr., sr.; prereq. 170, H.E.Ed. 90 or C.W. 40; MTWThF IV and 2 hrs. ar.; 213HE.) Miss Leichsenring.
- 178su. Clinical Problems in Nutrition. The use of nutrition facts in the solution of community nutrition problems. Discussions and reports. Opportunities for observing and participating in local nutrition projects. (3 cred.; prereq. 34 or 170 and 171, permission of the instructor; not open to students majoring in dietetics; TWThF II, 4 consecutive hrs. ar.; 313HE.) (Limited to 12 students.) Miss Biester.
- 180su. Home Planning and Furnishing. Problems in selecting a home and prolonging the life of the house and its furnishings. Intelligent planning and furnishing of the home will be stressed. (5 cred.; jr., sr., grad.; prereq. 27 or equiv.; MTWThFS I-II, MWThF III; 106HE.) (Limited to 24 students.) Miss H. Goldstein.
- 184su. Home Management: Operation and Management, Lectures. Discussion of the management aspects of homemaking with emphasis on the problems involved in the use of time, energy, and money. (3 cred.; jr., sr.; prereq. H.E. 40, C.W. 40 or H.E.Ed. 90 or parallel; MTWThF II and 1 hr. ar.; 213HE.) Miss Jeary.
- 185su. Family Relationships. A study of the factors that promote security, stability, and satisfaction in the immediate family group. The relation of the family to the community. The results of the impact of the war on family life. (2 cred.; jr., sr., grad.; prereq. C.W.40 or H.E.Ed. 90; MTWThF IV; 203HE.) Miss Studley.
- 295su. Home Economics Problems. Investigation of selected problems in the field of related art. (1 cred.; grad. only; permission of instructor; hrs. ar.) Miss H. Goldstein.

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

SECOND TERM

- 85su. Home Management: Operation and Management, Lectures. Discussion of the management aspects of homemaking with emphasis on the problems involved in the use of time, energy, and money. (3 cred.; jr., sr.; prereq. H.E. 40, C.W. 40 or H.E.Ed. 90 or parallel; MTWThFS IV; 213HE.) Miss Jeary.
- 86su. Home Management: Operation and Maintenance Laboratory. Same as first term. (4 cred.; jr., sr.; prereq. H.E. 40 or parallel, 85, C.W. 40, or H.E.Ed. 90; hrs. ar.) Miss Jeary and Miss Gough.

HOME ECONOMICS EDUCATION

For list of courses in Home Economics Education see courses listed under the College of Education, page 98.

HORTICULTURE

FIRST AND SECOND TERMS

- 190-191-192su. Special Problems. (Page 111†) (2 to 4 cred.; jr., sr., grad.; ar.; Hr.) Mr. Alderman, Mr. Brierley, Mr. Harvey, Mr. Krantz, Mr. Currence, Mr. Hutchins, Mr. Wilcox.
- 247su.* Report on Special Horticultural Topics. (Page 112†) (9 cred. or less) Mr. Alderman, Mr. Brierley, Mr. Harvey, Mr. Krantz, Mr. Currence, Mr. Hutchins, Mr. Wilcox.

PLANT PATHOLOGY AND BOTANY

FIRST AND SECOND TERMS

- 206su.* Research in Plant Pathology. (Page 142† description for Course 203-204-205.) (Cred. ar.; grad.; PP.) Mr. Stakman, Mr. J. J. Christensen, Miss Dossdall, Mr. Eide.
- 210su.* Research in Mycology. (Page 142†) (Cred. ar.; grad.; prereq. 105-106-107; PP.) Mr. Stakman, Miss Dossdall.
- 257su.* Research Problems in Applied Plant Physiology. (Page 143†) (Cred. ar.; grad.; PP.) Mr. Harvey, Mr. Landon.

BIOLOGICAL STATION SUMMER SESSION

Due to the lack of transportation facilities, the Biological Station at Itasca Park will be discontinued for the duration of the war.

† Page numbers in course descriptions refer to the Graduate School Bulletin for 1940-42, where further information may be found.

LAW SCHOOL

The Law School offers a complete quarter 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

Property I. (9 qtr. cred.) Mr. Fraser.
Constitutional Law. (6 qtr. cred.) Mr. Rottschaefer.

ADVANCED COURSES

Equity. (6 qtr. cred.) Mr. McClintock.
Constitutional Law. (6 qtr. cred.) Mr. Rottschaefer.
Judicial Administration. (6 qtr. cred.) Mr. Pirsig.
Mortgages. (3 qtr. cred.) Mr. Bade.
Wills. (3 qtr. cred.) Mr. Bade.
Insurance. (3 qtr. cred.)
Municipal Corporations. (3 qtr. cred.)

Tuition fees for the quarter are: resident, \$42; nonresident, \$69. Credit hour fee: resident, \$3.75; nonresident, \$6. There will be the usual incidental fee of \$9 for health service, etc. Deposit fee for the summer quarter only, \$2.

MEDICAL SCHOOL

GENERAL INFORMATION

GENERAL

Any of the courses offered by the departments of the Medical School (except section clinics of limited registration) are open to any student in the Summer Session, who has the necessary preparation to benefit therefrom, provided room is available in the classes.

FEES—MEDICAL STUDENTS

The Medical School tuition fee for a full Summer Session is \$77 for residents of Minnesota, and \$150 for nonresidents. Less than a full program may be paid for on a clock-hour basis, namely \$3.50 (nonresidents, \$7) for each weekly clock hour of scheduled work per quarter. In addition each student will pay the incidental fee of \$9 and a deposit of \$10. Students in certain courses are required to furnish microscopes.

Term fees are one-half the quarter fees. Laboratory fees are not required under this plan. The schedule of total fees will therefore be:

	Per Quarter	Per Term
Tuition fee	\$77.00 (\$150.00)	\$38.50 (\$75.00)
Incidental fee	9.00	4.50
Deposit	10.00	10.00

Fees must be paid on the above basis by all who elect the program of clinical subjects in the senior medical year; and by all who desire time credit on the medical course in this or any other medical school.

FEES—SUMMER SESSION STUDENTS

Students who do not desire to register for time credit toward a medical degree or for a program of clinical subjects may pay on the above basis; or at their option they may pay the regular Summer Session fee of \$30.80 per term, plus special course fees as indicated in course descriptions, and a \$2 deposit.

CLINICAL YEARS

The Medical School offers a full regular program for one quarter of each year. In order to receive legal time credit toward the degree of doctor of medicine or bachelor of medicine in this institution, students must be matriculated in the Medical School; see the Bulletin of the Medical School for requirements for admission and regulations governing advanced standing. Medical students from other schools who desire to enter for the summer only may do so as adult special students, receiving subject credit only. If such students desire legal time credit toward a medical degree, they should make arrangements with the institution from which they intend to take the degree. No obligation to accept such students into regular classes at this school is attached to adult special registration. Such students from other medical schools may take one of the programs listed below (except section clinics if already full) or, provided there is room in the classes, make up a special program from the courses offered. Admission to any course is conditioned upon the limit set by the department concerned.

Students from other institutions should consult the Bulletin of the Medical School to determine to what extent the courses listed fulfill their respective needs. They should consult the deans or department heads in their own schools as to equivalence of the courses offered at the University of Minnesota.

PROGRAMS FOR CLINICAL (JUNIOR AND SENIOR) YEARS

The courses offered in the clinical years are as follows:

The didactic and clinical courses for one regular quarter are offered in the Summer

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

Session, and all of the regular students will be in attendance. Students of other schools who desire to extend their clinical knowledge may register for the courses offered if there is room in the classes.

LABORATORY YEARS

Regular programs for freshman or sophomore medical students are offered. These courses may be taken by properly prepared students from other institutions as unclassified students, without matriculation in the Medical School, if there is room in the classes. Students who desire to secure time credit toward the degree of doctor or bachelor of medicine in this school must matriculate and secure written consent from the officers of the school from which they expect to receive their medical degrees.

OPPORTUNITY FOR PRACTITIONERS

Attention is called to short courses offered from time to time throughout the year under the General Extension Division and the Center for Continuation Study. These courses are exclusively for practitioners and are largely practical in nature. Circulars may be obtained from the Center for Continuation Study.

The regular clinics in the University of Minnesota Hospitals and Dispensary, the Minneapolis General Hospital, the Ancker Hospital, Glen Lake Sanatorium, and the Wilder Dispensary, St. Paul, will go on as usual during the Summer Session, and will be open to visiting physicians.

ELECTIVES

Various electives will be offered in the laboratory and clinical departments. See departmental statements in this bulletin and also special Summer Session programs of the Medical School for details.

GRADUATE COURSES

Attention is called to opportunities offered in Medical School departments to work during the Summer Session for advanced degrees, either in laboratory or clinical branches.

SCHOOL OF NURSING

COURSES AND FEES

Graduate Nurses

The program of courses in the 1944 Summer Session has been especially planned to allow for attendance for shorter periods than usual in order to meet the needs of graduate nurses who are unable to be absent from their positions for more than a brief period. A nurse may complete a course totaling three credits in the two-week workshop period from June 12 through June 24; or she may complete courses totaling approximately eight credits in the six-week period from June 12 through July 21. She may also carry approximately eight credits (chiefly academic) in the second term, July 24-August 25. Bolton Fund scholarships paying tuition, fees and maintenance may be requested by graduate nurses who qualify for admission, and who are carrying nursing courses. Requests for these funds should be addressed to the Director, School of Nursing, University of Minnesota, Minneapolis 14, Minnesota.

Students register in College of Education and pay Summer Session fees. See page 16.

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

Graduate Nurses in Psychiatric Nursing Instruction

An advanced course of three quarters in psychiatric nursing instruction will be offered starting June 12. The students will spend the Summer Session registered at the University in the School of Nursing for a full academic program. Courses during this period will be selected on the basis of individual need. The second and third quarters will be spent at the Rochester State Hospital where the student will receive a planned program of clinical instruction and experience. The course is open to graduate registered nurses. Bolton Fund scholarships are available for tuition, fees and maintenance, and application should be made to the Office of Admissions and Records, University of Minnesota, Minneapolis 14, Minnesota.

Tuition \$100 a quarter, incidental fee \$9 for first quarter. No incidental fee is charged for second and third quarters.

Postgraduate Nursing Students

The School of Nursing admits postgraduate students in Operating Room Technique, Teaching, and Administration at the beginning of the summer quarter for a nine-month course. Such applicants must: (1) be registered nurses; (2) have had one year of successful experience, preferably in institutional work; (3) have completed college courses in Sociology 1 and Psychology 1 and 2 with a grade of "C", or one year of satisfactory college work; and (4) meet the minimum entrance requirements for admission to the University of Minnesota. For further information see the Bulletin of the School of Nursing.

Students register in School of Nursing. They are exempt from tuition and incidental fee and pay only a \$10 matriculation deposit.

Inactive Graduate Nurses

A ten-week refresher course for inactive graduate nurses will be offered in the summer quarter June 12 through August 25, if fifteen students register for the course. Application should be made in advance to the Director of the School of Nursing, University of Minnesota, Minneapolis 14, Minnesota.

Inactive graduate nurses registered in refresher courses receive no credit and pay no fees.

Nursing Education Majors

Nursing education majors are urged to register for courses in their major during the Summer Session in order to accelerate their programs.

College graduates who have completed a basic professional program in nursing may begin specialization in the nursing education major in the Summer Session.

Students register in College of Education and pay Summer Session fees. See page 16.

Special Class for College Graduates

A class of college graduates will be admitted into the School of Nursing, June 12, 1944. For regular courses, requirements, etc., see the Bulletin of the School of Nursing. Students admitted to this class are eligible for membership in the U.S. Cadet Nurse Corps which pays all required expense and a monthly cash stipend for personal items. For further information regarding this program, see the Bulletin of the School of Nursing. Application should be made to the Office of Admissions and Records, University of Minnesota, Minneapolis 14, Minnesota.

Students register and pay fees in the School of Nursing. School of Nursing fees are listed on page 72.

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

Prenursing Students

Prenursing students registered in the College of Science, Literature, and the Arts may accelerate their total program by registering for a full program in the summer quarter. Some scholarship aid is available to qualified students. Requests for scholarship aid should be addressed to the Dean of Students, University of Minnesota, Minneapolis 14, Minnesota.

Students register in the College of Science, Literature, and the Arts and pay Summer Session fees. See page 16.

High school graduates who plan to take the basic professional program leading to the bachelor of science degree may accelerate their total program by registering in the College of Science, Literature, and the Arts for a full program in the Summer Session.

Fees—School of Nursing

The School of Nursing offers work on the quarterly (not term) basis. Fees charged for summer quarter 1944:

1st quarter in residence in School of Nursing:	11th and 12th quarters:
Tuition, resident and nonresident..... \$50.00	Tuition (3-year students) none
Clock hour, resident and nonresident..... 2.25	Postgraduates, tuition none
Incidental fee 9.00	Psychiatric nursing
Transportation fee 8.00	Tuition per quarter \$100.00
Deposit 10.00	Incidental fee (1st quarter only)..... 9.00
2nd through 10th quarters:	
Tuition, resident and nonresident..... \$20.00	
Clock hour, resident and nonresident.... .85	

Clinical Workshop students register in College of Education and pay Summer Session fees. See page 16.

ANATOMY

FIRST AND SECOND TERMS

- 3su. Elementary Anatomy. Special course under auspices of the United States Public Health Service. (3 cred.; for nurses; lect. MW VI; lab. MW VII-VIII; 301-303IA.) Dr. Dorothy Reiff and assistants.
- 60su.‡ Anatomy of Head and Neck. (6 cred.; fr. dent.; prereq. Anat. 59; lect. MWF VI; lab. VII-IX; 306-308IA.) Dr. Miller, Dr. Morningstar, and assistants.
- 103su.‡‡ Human Histology. Minute structure of the various tissues and organs. (9 cred.; fr. med.; prereq. Zool. 1-2-3, Anat. 100, 101; lect. MWF IV, Th VI; 102IA; lab., Sec. A, T III, IV, WF VII-IX, S I-III; Sec. B, MTTh VII-IX, F II-III; 214-216IA.) Dr. Downey (1st term), Dr. Rasmussen (2nd term), Dr. Kirschbaum and assistants.
- 107su. Human Embryology. Development of the human body. (6 cred.; fr. med.; prereq. Zool. 1-2-3, Anat. 100, 101; lect. T (7:30), W VI, Th I, 15MeS; lab., Sec. A, T I, II, Th II, III; Sec. B, MW I, II; 214-216IA.) Dr. Boyden, Dr. Wells, and assistants.
- 129su. Topographic Anatomy. Permission of instructor required. (Prereq. Anat. 100, 101; cred. and hrs. ar.) Dr. Boyden.
- 132su. Anatomical and Functional Aspects of Reproduction. Permission of instructor required. (Prereq. Anat. 100-103, 107; cred. and hrs. ar.) Dr. Wells.
- 150su. Special Topics in Neurology. (Permission of instructor required. Prereq. Anat. 111; cred. and hrs. ar.) Dr. Rasmussen.

‡ A fee of \$5.00 is charged for this course.

‡‡ A fee of \$7.50 and a microscope fee of \$1.50 is charged for this course.

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

- 156su.† Advanced Anatomy. Individual problems in gross anatomy, histology, embryology or neurology. Permission of instructor required. (Cred. and hrs. ar.) Dr. Boyden, Dr. Downey, Dr. Rasmussen, Dr. Wells, Dr. Campbell, Dr. Kirschbaum, Dr. Miller.
- 160su. Seminar in Problems of Reproduction. Permission of instructor required. (1 cred.; hrs. ar.) Dr. Wells.
- 204su. Research in Anatomy. Research in gross anatomy, histology, embryology, or neurology. Permission of instructor required. (Cred. and hrs. ar.) Dr. Boyden, Dr. Downey, Dr. Rasmussen, Dr. Wells, Dr. Campbell, Dr. Kirschbaum.

BACTERIOLOGY AND IMMUNOLOGY

FIRST TERM

- 53su. General Bacteriology. (Page 16†) (5 cred.; prereq. general chemistry and biology; MTWThF I, II, III; course fee \$1.50.) Dr. Skinner.
- 114su. Molds, Yeasts, and Actinomycetes. (Page 16†) (4 cred.; prereq. Bact. 53; MTThF VI, VII, VIII.) Dr. Skinner.
- 116su. Immunity. (Page 16†) (3 cred.; prereq. Bact. 53; MTThF VI, VII; course fee \$1.50.) Dr. Larson.
- 201su. Research in Bacteriology. (Page 16†) (Cred. and hrs. ar.) Dr. Larson, Dr. Skinner.

MEDICINE

FIRST AND SECOND TERMS

DIVISION OF INTERNAL MEDICINE

Required Courses

- 18-19su. Principles of Medical and Surgical Nursing.
- 102su. Clinical Chemistry and Microscopy. Methods of laboratory examination for diagnostic purposes. Sophomore year. (4 cred.; prereq. Physiol. Chem. 100; students must have completed or be taking Path. 101; 44 hrs.) Dr. Watson and staff.
- 104su. Introduction to Internal Medicine. Systematic lectures and clinics in the field of internal medicine. Junior year. (6 cred.; prereq. Med. 101, 102; 22 hrs. a qtr., 66 hrs. total.) Dr. Watson and staff.
- 109su. Clinic in Medicine. Part of Course 112. (Univ. Hosp.) Dr. Barron.
- 111su. Clinical Clerkship in Medicine. Individual work in the medical wards of the University Hospital, taking and recording of case histories, making of physical examinations, and carrying out assigned laboratory work. Clerks are held responsible for history and course of disease as well as a detailed knowledge of the treatment given to patients assigned them. Junior year. (6 cred.; prereq. clear record in all prior subjects; 260 hrs.) Dr. Watson and staff.
- 111xsu. Same as Course 111. (Minneapolis General Hospital). Dr. Fahr and staff.
- 112su. Senior Clerkship in Internal Medicine (Admissions). Supervised study of new cases in the Outpatient Medical Clinic. Rotation through special clinics including cardiology, gastrointestinal diseases, chest diseases, diabetes, metabolism and endocrinology, hematology, allergy, rheumatoid disease, peripheral vascular disease, and gastroscopy. (6 cred.; 260 hrs.) Dr. Wetherby and staff.

† Page numbers refer to the Medical School Bulletin for 1943-45, where further information may be found.

‡ A fee of \$1.00 per credit is charged for this course.

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

Elective Courses

- 128su. Abnormal Physical Signs in the Chest. (Jr., sr.; 17 hrs. Not more than 4 students. Tuberculosis Pav., Ancker Hospital.) Dr. Geer.
- 129su. Advanced Physical Diagnosis. (Prereq. Med. 106; jr.; not less than 3 or more than 6 students; Minneapolis General Hospital.) Dr. Peppard.
- 130su. Clinical Electrocardiography. (Jr.; not less than 3 or more than 6 students.) Dr. Ziskin.
- 132su. Diagnosis and Treatment of Diseases of the Lungs. Three lectures and two clinics per week. (Hospital wards and dispensary.) Lectures with or without hospital work. (Soph., jr., sr.; hrs. and cred. ar.) Dr. Myers.
- 133su. Gastroenterology. Clinic demonstration and discussions of disorders of the gastrointestinal tract. (Jr., sr.; 4 to 8 students; Univ. Hosp.) Dr. Carey.
- 135su. Essentials of Diagnosis and Treatment of Heart Disease. Practical clinics on cardiac patients. Junior year. (Limited to 8 students.) Dr. Shapiro.
- 136su. The Respiratory Organs in Health and Disease. (One or more qtrs.; limited to 6 students.) Dr. Myers.
- 139su. Clinical Electrocardiography. (Jr.; hrs. and cred. ar.; Minneapolis General Hospital.) Dr. Kerkhof.

Courses for Graduate Students

- 201su. Clinical Medicine. Dr. Watson, Dr. Barron, Dr. Fahr, Dr. W. W. Spink.
- 202su. Diseases of the Cardiovascular Apparatus. Dr. Fahr.
- 203su. Research in Medicine. Dr. Watson, Dr. Fahr, Dr. Spink.
- 205su. Tuberculosis. Dr. Myers.

For other courses see Graduate Medical School Bulletin.

DIVISION OF DERMATOLOGY

Required Courses

- 124su. Senior Clerkship in Dermatology. Sections of the senior class in dermatology and syphilis. (4 cred.; 90 hrs.; Univ. Hosp.) Dr. Michelson and staff.
- 124xsu. Part of Course 124. (Minneapolis General Hospital.) Dr. Sweitzer, Dr. Winer, and staff.

Elective Courses

- 157su. Ward Clinics in Dermatology. (Jr.; 17 hrs. Ancker Hospital.) Dr. Lynch, Dr. Madden, Dr. Gager, Dr. Klein.
- 158su. Clinic in Dermatology. (Wilder Dispensary.) Dr. Klein.
- 159su. Assistantship, Dermatology, and Syphilis. (Prereq. jr. med. clerkship; limited to one student; Minneapolis General Hospital.) Dr. Sweitzer, Dr. Rusten, Dr. Winer.
- 160su. Assistantship and Conference in Dermatology. (Prereq. jr. med. clerkship; limited to one student; Univ. Hosp.) Dr. Michelson and staff.
- 161su. Assistantship in Dermatology. (Prereq. Med. 124; limited to 2 students; Minneapolis General Hospital.) Dr. Sweitzer.
- 163su. Treatment of Syphilis. (Limited to 2 students; UD.) Dr. Michelson.
- 164su. Seminar in Pathology. Histopathology of the skin. Clinical and pathological phases will be exemplified. (Prereq. Path. 102.) Dr. Winer.
- 165su. Seminar in Dermatology. (Hrs. ar.) Dr. Michelson and others.
- 166su. Allergy and Dermatology. (Cred. and hrs. ar.; limited to one student.) Dr. Rusten.

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

Courses for Graduate Students

- 267su. Dermatology and Syphilology. Dr. Michelson and staff.
 268su. Histopathology. Dr. Michelson, Dr. Winer, and staff.
 269su. Therapy of Syphilis. Dr. Michelson and staff.
 270su. Dermatology and Syphilology. Dr. Sweitzer and staff.
 271su. Dermatology in Students' Health Service. Dr. Michelson and staff.
 272su. Allergy in Dermatology. Dr. Michelson, Dr. Sweitzer, and staff.
 273su. Dermatology and Syphilology. Dr. Michelson and staff.

DEPARTMENT OF NEUROPSYCHIATRY

Required Courses

- 101su. Clinical Neuropsychiatry. Systematic clinics, demonstrations, and lectures. (Jr. yr.; prereq. Med. 101, 102; 44 hrs.; 4 cred.) Dr. McKinley, Dr. Hammes, and staff.
 103su. Junior Clinical Clerkship in Neuropsychiatry. Sections of the class for nine-week periods in the University Hospital. (260 hrs.; 6 cred.) Dr. McKinley and staff.

Elective Courses for Nonmedical Students

- 70su. Introductory Psychiatry (Social Work 170). For upper group only. (Prereq. elem. psy. and soc.; 33 hrs.) Dr. Hinckley.
 171su. Descriptive Neuropsychiatry (Social Work 171). (Prereq. Med. 70 or Psy. 144-145; 33 hrs.) Dr. Baker, Dr. Cottrell.
 172su. Advanced Considerations in Psychiatry (Social Work 172). For sociology students, psychiatric nurses, etc. (Prereq. Med. 70 and 171; 11 hrs.) Dr. Clarke.
 173su. Mental Hygiene Aspects of Public Health Nursing. For graduate nurses only. (33 hrs.) Dr. Clarke.

Elective Courses for Medical Students

- 143su. Problems in Neuropathology. (Same as Path. 114.) (Prereq. Path. 101 and 102; cred. and hrs. ar.; limited to 2 students.) Dr. Baker.
 144su. Neuropathology. (Same as Path. 115.) Individual gross and microscopic studies on existing preparation in neuropathology. (Prereq. Path. 101 and 102; cred. and hrs. ar.; limited to 2 students.) Dr. Baker.
 145su. Problems in Neuropsychiatry. The student will be assigned a topic for special study. (Prereq. Path. 102; cred. and hrs. ar.; limited to 2 students.) Dr. McKinley, Dr. Baker, Dr. Hathaway, Dr. Schiele.
 146su. Psychiatric Problems in General Medical Practice, Including the Psychoneuroses. Junior year. (Not less than 5 students. Univ. Hosp.) Dr. Schiele.
 150su. Advanced Neuropathology. (Same as Course 210 in the Graduate School.) (Prereq. Path. 101 and 102; cred. and hrs. ar.) Dr. Baker.
 151su. Survey of Neuropathology. (Same as Path. 117.) Same as Course 212 in the Graduate School. (Prereq. Med. 150; cred. and hrs. ar.) Dr. Baker.

Courses for Graduate Students

- 207su. Pathology of the Nervous System. Dr. Baker.
 208su. Clinical Neurology. Dr. McKinley, Dr. Baker, Dr. Schiele.
 208xsu. Clinical Psychiatry. Dr. McKinley, Dr. Hathaway, Dr. Schiele.
 209su. Research in Neurology and Psychiatry. Dr. McKinley, Dr. Baker, Dr. Hathaway.
 210su. Advanced Neuropathology. (Prereq. Path. 101 and 102.) Dr. Baker.

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

- 211su. Intracranial Neoplasms. (Same as Path. 116.) (Prereq. Path. 101 and 102.) Dr. Baker.
- 212su. Survey of Neuropathology. (Prereq. Med. 210.) Dr. Baker.
- 215su. Seminar in the Application of Psychological Methods to the Study of Neuropsychiatry. Dr. Hathaway.
- 216su. Neuropsychiatric Case Conference. (Cred. and hrs. ar.) Dr. McKinley and staff.
- 218su. Child Neuropsychiatry. Clinical experience and didactic conferences in the Children's Clinic. (Cred. and hrs. ar.) Dr. Clarke, Dr. Jensen.
- 219su. Psychology of the Abnormal Person. (Cred. and hrs. ar.) Dr. Schiele, Dr. Hathaway.
- 220su. Conferences on the Problem of Psychopathic Personality. (Cred. and hrs. ar.) Dr. Hathaway.
- 221su. Psychometric Clerkship. Psychological testing of inpatient and outpatient cases in the University Hospital. (Cred. and hrs. ar.) Dr. Hathaway, Dr. Hunt.
- 222su. Interviewing Techniques in Psychiatry. Supervised practice and demonstration. (1 cred.) Dr. McKinley, Dr. Hathaway.
- 223su. History of Psychiatry. A study of major trends in diagnosis and treatment. (2 cred.) Dr. McKinley and staff.

OBSTETRICS AND GYNECOLOGY

FIRST AND SECOND TERMS

Required Courses

- 123su. Obstetrics. Pathology of pregnancy, labor, and the puerperium. Senior medical students. (Prereq. 120; 11 hrs.) Dr. McKelvey, Dr. McLennan, and staff.
- 125su. Introduction to Obstetrics and Gynecology. Junior medical students. (No prereq.; 11 hrs.) Dr. McKelvey, Dr. McLennan, and staff.
- 135su. Clinical Clerkship in Obstetrics and Gynecology. Study and care of assigned patients in the University of Minnesota Hospitals and Dispensary, Minneapolis, and Salvation Army Home, St. Paul; manikin practice, case histories, physical and laboratory examinations; parturition and bedside clinics, and operations. Includes 135xsu. (240 hrs.; selection of Div. B sr.; prereq. 120, 121, 122, 123; daily through either term, 9:00-5:00; EMH.) Dr. McKelvey and staff.
- 135xsu. Clinical Clerkship in Obstetrics and Gynecology. Part of 135su, but given at the Minneapolis General Hospital. (MTWThFS 9:00-5:00.) Dr. Lang, Dr. Simons, and staff.

OPHTHALMOLOGY AND OTOLARYNGOLOGY

FIRST AND SECOND TERMS

Required Courses

- 100su. Lectures in Ophthalmology. Senior medical students. Dr. Hansen, Dr. Camp, Dr. Hymes, Dr. Pfunder, Dr. Hoffman, Dr. Stanford.
- 102su. Lectures in Laryngology. Senior medical students. Dr. Boies, Dr. Phelps, Dr. Hochfilzer, Dr. Holmen, Dr. Tangen.
- 103su. 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, Dr. Hoffman, Dr. Stanford.

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

104su. Clinic in Diseases of the Ear. Senior medical students. Diagnosis and treatment of cases. Dr. Boies, Dr. Connor, Dr. Fjelstad, Dr. Hochfilzer, Dr. Holmen, Dr. Tangen.

Elective Courses

106su. Operative Clinic in Eye. Limited to 6 students. (1 cred.; T or Th 3:00 to 4:30.) Dr. Hansen and staff.

107su. Ophthalmoscopy. Limited to 8 students. Two sections. (22 hrs. cred.; days and hrs. ar. with the departmental office.) Dr. Schwartz, Dr. Hoffman, Dr. Stanford.

135su. Conservation of Hearing. (Same as P.M.&P.H. 135.) Detection, prevention, and amelioration of hearing impairments as related to public health education, school, industrial and public health nursing, and medical social service. Admission by approval of Department of Preventive Medicine and Public Health. (1 cred.; prereq. training or experience in public health, school, or industrial nursing; TTh II; ar.) Dr. Boies and staff.)

PATHOLOGY

FIRST AND SECOND TERMS

Required Courses

102su.† Pathology. Special pathology. Sophomore medical students. (165 hrs.; 9 cred.; 10 hrs. lab.; prereq. Path. 101; lect. MTWTh 8:00 to 8:50, S 11:30-12:20; 102 IA.) Dr. Bell, Dr. Clawson, Dr. McCartney, and assistants.

109su.† Clinical-Pathological Conference. Presentation of clinical data on selected cases and of the pathological specimens from the same, with discussion of etiology and diagnosis. Required in clerkship period. Elective for others. (1 cred.; prereq. Path. 102; F 4:00-5:00; 102 IA.) Dr. Bell and staff.

Elective Courses

104su.† Autopsies. Postmortem technique; examination of fresh organs, etc. (Cred. and hrs. ar.; prereq. Path. 102.) Dr. Bell and staff.

111su.† Conference on Autopsies. (1 cred.; prereq. Path. 102; 12:30-2:00 T; 104 IA.) Dr. Bell and staff.

201su.† Research. Students with the necessary preliminary training may elect research either as a major or minor in pathology. Permission required. (Cred. and hrs. ar.) Dr. Bell, Dr. Clawson, Dr. McCartney, Dr. Noble.

PEDIATRICS

FIRST AND SECOND TERMS

Required Junior Courses

120su. The Normal Child. (a) Physical growth and development. Dr. Booth, Dr. Beach. (b) Psychological development. Dr. J. E. Anderson, Dr. Goodenough. (c) Physiology and metabolism of infancy and childhood. Dr. McQuarrie, Dr. Ziegler. (11 hrs.; 1 cred.; WS 8:00 to 8:50 a.m.; Eustis Amphitheater.)

121su. Clinical Diagnosis in Infancy and Childhood. The pathogenesis of disorders of childhood and their recognition and classification, including the disturbances of speech, psychiatric disorders, dental diagnosis, and indications for orthodontia. Follows Course 120. (11 hrs.; 1 cred.; WS 8:00 to 8:50 a.m.; Eustis Amphitheater.) Dr. McQuarrie, Dr. Bryngelson, Dr. Adams, Dr. Stoesser, Dr. Cohen, Dr. Jensen, and staff.

† Not offered to fewer than 10 students.

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

- 122su. Diseases of Infancy and Childhood and Their Treatment. Emphasis is placed on the diseases which are more or less peculiar to the age periods before the sixteenth year. Follows Course 121. (22 hrs.; 2 cred.; WS 8:00 to 8:50 a.m.; Eustis Amphitheater.) Dr. McQuarrie and senior staff.
- 123su. Divisional Demonstration Clinic on Noncontagious Diseases. One quarter for each student. (17 hrs.; 1½ cred.; W 9:00 to 10:30 a.m.; Minneapolis General Hospital.) Dr. Huenekens.
- 124su. Junior Clinical Clerkship in Pediatrics. Patients in the wards are assigned to individual students for examination, treatment, and "follow-up" observation under supervision. Each student has five weeks at University-Hospital and five weeks at Minneapolis General Hospital. (260 hrs.; 6 cred.) Dr. McQuarrie, Dr. Stoesser, Dr. Adams, Dr. Jensen, Dr. Beach, and staff.
- 130su. Divisional Demonstrations Clinic on Contagious Diseases. One quarter for each student. (11 hrs.; 1 cred.; Minneapolis General Hospital and Ancker Hospital.) Dr. Stoesser and clinical staff.

Required Senior Courses

- 135su. Senior Clinical Clerkship in Pediatrics. Patients in dispensaries are assigned to individual students for examination, treatment, and "follow-up" observation under supervision. Special clinics in well-baby care, allergy, heart, metabolism, and child psychiatry are attended each week. One sixth of class on pediatric clerkship at one time—one half assigned to the University Hospital, the other half to the Minneapolis General Hospital.) (6 weeks; 160 hrs.; 4 cred.; 9:00 to 12:00 noon daily.) Dr. McQuarrie, Dr. Stoesser, Dr. J. M. Adams, Dr. Jensen, and staff.

Elective Courses

- 150su.† Physiology and Diseases of the Newborn. Dr. Stoesser, Dr. Adams.
- 152su.† Fundamental Principles of Nutrition and Metabolism as Applied to Children. Seminar course. Dr. McQuarrie, Dr. Ziegler.
- 154su.† Endocrinology As Applied to Pediatrics. Seminar course. Dr. McQuarrie.
- 156su.† Advanced Study of Noncontagious Diseases. Both clinical and experimental subject matter included. Dr. McQuarrie, Dr. Adams.
- 158su.† Advanced Study of Contagious Diseases. Dr. Stoesser, Dr. Platou.
- 160su. Allergic Disorders in Childhood. Dr. Stoesser.
- 162su. Common Behavior Disturbances in Childhood. Their recognition and management. Dr. Jensen, Dr. Lippman.
- 166su. Weekly Seminar for Detailed Discussion of Fundamental Subjects Related to Pediatrics. Dr. Ziegler, Dr. McQuarrie.
- 168su. Speech Disturbances in Childhood. Clinic course. Dr. Bryngelson, Dr. Jensen, Mrs. Brown.
- 170su. Rheumatic Infection and Heart Diseases in Childhood. Dr. Adams, Dr. Dwan.
- 172su. Dental Disorders in Relation to General Health. Dr. Brekhus, Dr. Rudolph, Dr. Cohen, Dr. Armstrong.

Courses for Graduate Students

- 200su. Graduate Seminar in Pediatrics. (17 hrs.; 1½ cred. per qtr.) Dr. McQuarrie and senior clinical staff.

† Not offered to fewer than 10 students.

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

- 202su.† Pediatric Clinic. Outpatient department. University Hospital. (Daily 9:00-12:00 noon.) Dr. Adams, Dr. Jensen.
- 204su.† Three month's residence in pediatrics at the University Hospital. Dr. McQuarrie, Dr. Adams, Dr. Booth, Dr. Jensen, Dr. Ziegler.
- 206su.† Three month's residence in pediatrics at the University Hospital. Dr. McQuarrie, Dr. Adams, Dr. Booth, Dr. Jensen, Dr. Ziegler.
- 208su.† Pediatric Research. Special problems. Students may collaborate with members of the staff or with other students. Dr. McQuarrie, Dr. Ziegler, and staff.
- 210su. Special Clinics in Pediatrics. Dr. Stoesser, Dr. Jensen, Dr. Adams.

PHARMACOLOGY

FIRST AND SECOND TERMS

- 8su. Elementary Pharmacology. For student nurses. (3 cred.; 33 hrs.; lect. TTh VII, 113MeS; lab. TTh VIII-IX, 101MH.) Dr. Bieter, Dr. Wright, Dr. Litchfield, and assistants.
- 102su. General Pharmacology. A detailed study of drugs important in medical practice. For sophomore medical students. (Prereq. 101; 6 cred.; lect. 44 hrs.; lab. 66 hrs.; lect. MTW IV, F I; 129MH; lab. MW VI-VIII, FS II-IV; 101MH.) Dr. Bieter, Dr. Wright, Dr. Litchfield, and assistants.
- 103,104,108su. General Pharmacology. A detailed study of drugs important in medical practice in continuation of Course 102. Prescription writing. For junior medical students. (Prereq. 102; 3 cred.; lect. 33 hrs.; MF 4:00; 129MH.) Dr. Bieter, Dr. Wright.
- 109su.‡ Pharmacological Problems. Experimental study of special topics in pharmacology with a review of the literature. (Hrs. and cred. ar.) Dr. Litchfield.
- 110,110xsu. Toxicology. A study of the incidence, symptoms, treatment, etc. of the more common poisons; public health and industrial toxicology; medico-legal implications; and laboratory exercises in systematic qualitative toxicological analysis. Lectures only may be taken if desired (110xsu.). (Hrs. and cred. ar.) Dr. Wright.
- 111su. Advanced Toxicology. An intensive laboratory study of analytical methods employed in quantitative toxicological analysis, with assigned readings and critical discussions of methods and interpretations. (Prereq. 110, or may be taken simultaneously; hrs. and cred. ar.) Dr. Wright.
- 203su. Research in Pharmacology. For graduate and advanced students. (Hrs. and cred. ar.) Dr. Bieter, Dr. Wright.
- 204su. Advanced Pharmacology. (Hrs. and cred. ar. Limited to 4 graduate students.) Dr. Bieter, Dr. Wright.
- 205su. General Discussions in Pharmacology. With collateral reading. (11 hrs.; 1 cred.; limited to 6 advanced students.) Dr. Bieter, Dr. Wright.

PHYSIOLOGY

FIRST TERM

- 4su. Human Physiology. An elementary course consisting of lectures and demonstrations for students desiring an introduction to the subject. (4 cred.; prereq. high school or college biology and chemistry; lect. and dem. MTWThF I, II; 113MeS.) Course fee \$2. Dr. Lifson and others.

† Time and credit to be arranged with Dr. McQuarrie.

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

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

203su. Research in Physiology. (Cred. and hrs. ar.) Dr. Visscher.

205su. Research in Physiological Chemistry. (Cred. and hrs. ar.) Dr. Burr, Dr. Armstrong, Dr. Samuels, Dr. Barnum.

SECOND TERM

2su.‡ Elements of Physiology. Offered for students of nursing. (4 cred.; no prereq.; lect. MTWThFS I; lab. TF III, IV.) Mrs. Coe and others.

203su. Research in Physiology. (Cred. and hrs. ar.) Dr. Visscher.

205su. Research in Physiological Chemistry. (Cred. and hrs. ar.) Dr. Burr, Dr. Armstrong, Dr. Samuels, Dr. Barnum.

FIRST AND SECOND TERMS

1su.‡ Elements of Physiological Chemistry. Offered for students of nursing. (4 cred.; no prereq.; lect. TWF II; lab. Th II, III.) Dr. Barnum and others.

58su. Human Physiology. Primarily for dental students.§ First quarter of a two-quarter course. (5 cred.; sr.; prereq. zool. and Physiol. 56, 57; M I, WS II; quiz W III; lab. M II, III, IV.) Dr. King.

101su. Physiological Chemistry. For freshmen medical students and others. (Prereq. Physiol. 100; lect. TF 1:30-2:20, S 11:30-12:20; 15MeS; quiz F 8:30-9:20; 15MeS; lab. Div. A., MW 8:30-11:20; Div. B., Th 9:30-11:20.) Dr. Burr, Dr. Samuels, Dr. Armstrong, and others.

117su. Tissue Culture Laboratory. (Cred. and hrs. ar.) Dr. King.

153su. Problems in Physiological Chemistry. Special work arranged with qualified students. May be taken one or more quarters. (Prereq. Courses 100, 101; hrs. and cred. ar.) Dr. Burr, Dr. Armstrong, Dr. Samuels, Dr. Barnum.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

FIRST TERM

50su.¶ Public and Personal Health. Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings. (3 cred.; open to jrs. and srs. who have not taken 3, 4, 52, or Human Biology (G.C. 10C) in the General College; no prereq.; MTWThFS II; †.) Dr. Potthoff.

59su.** Health of the School Child. Mental and physical growth; discovery of physical defects; exercise, fatigue, emotional problems; health habits; diseases of school children; practical problems of health supervision and health instruction. (3 cred.; prereq. 4, 50, 51, 52, or 53, will be waived for teachers and school nurses, but cred. granted only after completion of prereq.; MTWFS IV; †.) Miss Grout, Mrs. Harris.

61su. Mental Hygiene. Emotional reaction to the environment; prevention of mental disturbances; relationship of these problems to work of public health nurses. (3 cred.; public health nurses; prereq. 53 and/or 62 which may be taken concurrently; MTWThFS I; †.) Miss Shalit.

62,63su. Principles of Public Health Nursing. The public health nurse's role in the various services of a public health program; discussion of individual, family, and community health problems; teaching in the home, principles of organization and administration of public health nursing services including planning of the program;

† Room schedule posted on bulletin board outside of 121 Millard Hall.

‡ A fee of \$2.50 is charged for this course.

§ Others may be admitted by special permission.

¶ No credit is granted for this course in the major sequence in public health nursing.

** Students cannot receive credit for both Courses 59 and 69.

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some discussion of special services such as school and industrial nursing. (6 cred.; public health nurses; prereq. 53 or equiv. but may be taken with 53. MTWThFS II-III; †.) Mrs. Harris.

66su.††§ Field Practice in Rural Nursing. Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53, 62, and 67.) Miss Freeman.

67su.††§ Field Practice with Family Health Agency. Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics, and in home visiting. This includes bedside care of all types of cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53, 62.) Miss Freeman, Miss Draper, Miss MacMillan, Mrs. McKinnon, Miss Nelson, Miss Shalit.

100su. Preventive Medicine. Environmental and biologic factors concerned in the maintenance and transmission of disease, and the possibilities of control or prevention through the efforts of the private physician alone or in collaboration with community, state, or federal agencies. (4 cred.; soph. med. students only.) Dr. Boynton and associates.

101su. Public Health Administration and Field Work. A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; sr. med. students only.) Dr. Boynton and associates.

102su. Environmental Sanitation I. Methods for promoting man's health and comfort by controlling his environment, water supply sanitation, food sanitation, pollution abatement; sewage, excreta, and waste disposal; bathing place sanitation, air hygiene, illumination, housing, control of insect and animal vectors of disease, industrial hygiene and sanitation. (3 cred.; sr., grad.; prereq. 50 or 51 or 53 or 100 or by permission, or may be taken concurrently with any of these; MTWThFS III; †.) Mr. Whittaker.

123su. Topics in Public Health. Selected readings in public health with discussion based on these readings. (Cred. ar.; prereq. permission of instructor; ar.) Dr. Boynton.

124su. Principles and Practices in Health Education. (Same as Ed.C.I. 126.) Health education in the schools and community, channels of information, methods and materials. (3 cred.; prereq. experience in public health or teaching and a basic course in personal and community hygiene; MTWThFS II; †.) Miss Grout.

129su. Principles and Problems of Teaching Social Hygiene. (Same as Ed.C.I. 129.) 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. Designed for both school personnel and nurses. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. or grad. nurses; MTWThF III and 1 hr. ar.; 360SBH.) Mr. Griffiths, Dr. Pearce.

170su. Supervision in Public Health Nursing. Nature of supervision, classification of activities; methods of supervision, including field visitation, individual counseling, group conferences, staff education programs, administrative functions of supervisors,

† Room schedule is posted on bulletin board outside of 121 Millard Hall.

§ Students must maintain a C average in theory completed before they are admitted to any field work.

†† A fee of \$50 per month is charged for this course.

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- preparation and selection of supervisors. (3 cred.; prereq. 53, 61, 63 and experience in public health nursing, or by permission; MTWThFS III; †.) Miss Freeman.
- 171su. Problems in Public Health Nursing. For advanced students who wish to work on special problems in public health nursing. (Cred. ar.; prereq. 170 or permission of instructor.) Miss Freeman and associates.
- 174su. Supervision Laboratory. Intensive study of certain supervisory techniques such as construction of manuals, rating sheets and report forms. Methods of making time and service studies are also considered. (2 cred.; prereq. 170 or may be taken concurrently. †) Miss Freeman.
- 182su.‡ Workshop in Industrial Health. (July 10-22.) Group and individual work on the health problems of industrial workers. Group discussions, individual conferences and special seminars will be arranged. (3 cred.; public health nurses.) Miss Kahl, Dr. Foker, and visiting lecturers.

SECOND TERM

- 53su. Elements of Preventive Medicine and Public Health. Susceptibility, resistance, and immunity to disease; methods of spread and prevention of communicable and degenerative diseases; protection of food, water, and milk; school health work; vital statistics. (5 cred.; prereq. 3 or 50 or equiv. and a course in bacteriology; public health nurses and students in medical social work; lect. MTWThFS III, rec. MTWF IV; †.) Dr. Cowan.
- 60su. Tuberculosis and Its Control. History of tuberculosis movement and campaign in the United States. Early diagnosis and sanatorium treatment; tuberculosis in children; the psychology of tuberculosis; supervision of returned sanatoria patients; state program for the eradication of tuberculosis; legislation. (2 cred.; jr., sr.; prereq. 4, 50, 51, 52, 53, and 62; MTWF IV; †.) Dr. Myers.
- 65su.‡‡§ Field Practice in School Nursing. Credits allowed according to experience in this field. Working with the school nurse the student observes and participates in the activities included in the school nursing program; special attention to organization, relationships, techniques, methods of informal health teaching, provision for handicapped children, and home visiting. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53, 62, and 67.) Mrs. Harris.
- 66su.‡‡§ Field Practice in Rural Nursing. Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53, 62, and 67.) Mrs. Harris.
- 67su.‡‡§ Field Practice with Family Health Agency. Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics and in home visiting. This includes bedside care of all types of cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53, 62.) Miss Draper, Miss Nelson, Miss Shalit.

† Room schedule posted on bulletin board outside of 121 Millard Hall.

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

‡‡ A fee of \$50 per month is charged for this course.

§ Students must maintain a C average in theory completed before they are admitted to any field work.

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- 70su.††† Special Methods and Supervised Teaching in Health Education for Public Health Nurses. (Same as Ed.T. 50.) Includes practice in planning instruction and in teaching adults. Enrolment limited. (4 cred.; jr., sr.; prereq. 65, 66, 67, and permission of instructor; MTWThF VI-VIII; †.) Miss Bestul.
- 76su. Nutrition for Public Health Nurses. (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; MTWThFS II; †.) Miss Donelson.
- 101su. Public Health Administration and Field Work. A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; sr. med. students only.) Dr. Boynton and associates.
- 129su. Principles and Problems of Teaching Social Hygiene. (Same as Ed.C.I. 129.) Emphasis placed on methods of teaching social hygiene in the public schools and materials for instructional use in the elementary and secondary schools. Designed for both school and personnel nurses. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. or grad nurses; MTWThF III and 1 hr. ar.; 360SBH.) Mr. Griffiths, Dr. Pearce.
- 135su. Conservation of Hearing. (Same as Med 135.) Detection, prevention, and amelioration of hearing impairments as related to public health education, school, industrial, and public health nursing, and medical social service. (1 cred.; prereq. 53 and 62 or to be taken concurrently; TTh I; †.) Dr. Boies and associates.
- 180su.†† Workshop in Community and School Health Education. (July 24-August 5.) Same as Ed.C.I. 127. Work on individual and group problems in the fields of community and school health education. Especially designed for teams of educational and health personnel from local communities. (3 cred.; hrs. ar.) Miss Freeman, Miss Grout, Miss Starr, Dr. Dukelow, Mr. Jack, Mr. Walker, and others.

BIOMETRY

FIRST TERM

- 110su. Biometric Principles. An introduction to statistical analysis with emphasis on the basic principles of statistical reasoning, the description of univariate distributions, normal correlations, simple tests of significance, and goodness of fit. Course 111 will be taken concurrently. (3 cred.; prereq. 18 cred. in biol. sci. or math. through anal. geom.; MTWThFS I; 118MH.) Mr. Treloar.
- 111su.† Biostatistics 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.
- 140su.*† Topics in Biostatistics. Studies in special topics for advanced students. (Cred. ar.; prereq. 120, 130, or consent of instructor; hrs. ar.; 118MH.) Mr. Treloar.

SECOND TERM

- 150su.‡ Vital Statistics. Mortality rates and the construction of the life table. Laboratory course with discussions, offered when sufficient demand exists. (3 cred.; prereq. permission of instructor.) Mr. Treloar.

† Room schedule posted on bulletin board outside of 121 Millard Hall.

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

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

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

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

RADIOLOGY

FIRST AND SECOND TERMS

Required Courses

- 111su. Medical Roentgenologic Conference for Medical Clerks. Part of Medicine 111. (9 hrs.) Dr. Rigler.
- 112su. Roentgen Diagnostic Clinic for Medical Clerks. Part of Medicine 112. (9 hrs.) Dr. Rigler.
- 121su. Roentgenology and Radiation Therapy and Biophysics. Lectures and demonstrations. For junior medical students. (44 hrs.; 4 cred.) Dr. Rigler, Dr. Stenstrom.
- 124su. Pediatric-Roentgenologic Conference for Pediatric Clerks. Part of Pediatrics 124. (9 hrs.) Dr. Rigler.
- 125asu. Radiation Therapy for Surgical Clerks. Part of Surgery 135. (9 hrs.) Dr. Stenstrom.
- 125bsu. Roentgen Diagnostic Clinic for Surgical Clerks. Part of Surgery 135. (9 hrs.) Dr. Rigler.
- 125csu. Surgical Roentgenologic Conference for Surgical Clerks. Part of Surgery 135. (9 hrs.) Dr. Rigler.

Elective Courses

- 103su. Clinic in Physical Therapy. Junior, senior, and graduate students. (22 hrs.) Dr. Knapp.
- 104su. Roentgen and Radium Therapy. Junior, senior, and graduate students. (11 hrs.) Dr. Stenstrom.
- 106su. Lectures in Physical Therapy. (11 hrs.) Dr. Stenstrom, Dr. Knapp.
- 185su. Reading of Films. Junior or senior year. (Prereq. 121; 11 hrs.) Dr. Rigler, Dr. Peterson.
- 186su. Roentgen Technique. Junior or senior years. (22 hrs.) Dr. Rigler.
- 187asu. Roentgen Anatomy of Bones and Joints. Same as Anatomy 148. (Prereq. Anatomy 100 and 101; 11 hrs.) Dr. Borman.
- 187bsu. Roentgen Anatomy of Viscera. (Prereq. Anatomy 100 and 101; 11 hrs.) Dr. Borman.
- 188asu. Roentgen Diagnosis of Diseases of Bones and Joints. (Prereq. 121; 11 hrs.) Dr. C. O. Hansen.
- 188bsu. Roentgen Diagnosis of Diseases of Thorax. (Prereq. 121; 11 hrs.) Dr. M. B. Hanson.
- 188dsu. Roentgen Diagnosis of Diseases of Abdominal Viscera. (Prereq. 121; 11 hrs.) Dr. Aurelius.
- 188dsu. Roentgen Diagnosis of Diseases of the Gastrointestinal Tract. (Prereq. 121; 11 hrs.) Dr. Morse.
- 189asu. Clinic in X-ray Diagnosis. (Prereq. 121; 11 hrs. Univ. Hosp.) Dr. Rigler.
- 189bsu. Clinic in X-ray Diagnosis. (Prereq. 121; 11 hrs. Minneapolis General Hospital.) Dr. Ude.
- 195su. Clinic in X-ray Therapy. Junior or senior year. (11 hrs.) Dr. Stenstrom.
- 200su. Research in Roentgenology. (Hrs. and cred. ar.) Dr. Rigler.
- 205su. Research in Radiation Therapy. (Hrs. and cred. ar.) Dr. Stenstrom.
- 208su. Radiology Seminar. (11 hrs.) Dr. Rigler, Dr. Stenstrom.

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

SURGERY

FIRST AND SECOND TERMS

Required Courses

- 121su. Principles of Surgery. The basic principles of surgery, including anesthesia, antiseptics, asepsis, hemostasis, inflammations and the process of the repair of tissues. Lectures and demonstrations. Sophomores. (33 hrs.; 3 cred.) Dr. Knight, Dr. Dennis, Dr. Leven, Dr. Lannin, Dr. Varco.
- 126su. Orientation Course in General Surgery. A series of clinical lectures on regional surgery (exclusive of urology, orthopedics, and neurosurgery) emphasizing pathology, diagnosis, and essentials of treatment. These lectures attempt to orient the student in his study and reading. Juniors. (22 hrs.; 2 cred.) Staff.
- 127su. Surgical Diseases of the Nervous System. Lectures on the surgical diseases of the brain, spinal cord, meninges, peripheral nerves, and sympathetic nervous system. Juniors. (11 hrs.) Dr. Peyton.
- 129su. Surgical Clinics for Juniors. Amphitheater clinic demonstrating surgical conditions in hospital patients. (33 hrs. 3 cred.) Surgery staff.
- 135su. Clinical Clerkship. The individual study of assigned patients; case histories, laboratory examinations, provisional diagnoses with suggestions as to therapy; attendance at operation and observation of postoperative management. (Jr.; 260 hrs.; 6 cred.) Staff.
- 135asu. Clinical Pathology of Tumors. A combined clinical and pathological consideration of tumors. In so far as available material permits, a systematic presentation of the manifestations and effects of malignant tumors which come in the province of general surgery and its divisions. Part of Course 135. (Univ. Hosp.) Staff.
- 135bsu. Reading Course. A weekly recitation during the clerkship on assigned reading in a standard textbook of surgery. Quiz and lecture. Part of Course 135. Surgery staff.
- 135csu. Surgical-Pathological Conference. A review of the gross and microscopic findings of surgical specimens removed during the preceding week; also an attempt will be made to review systematically some of the aspects of surgical pathology which are of especial importance to surgeons. Part of Course 135. Surgery staff.
- 135casu. Medico-Surgical-Pathological Conference. Weekly combined meetings of medical and surgical staffs in which the postmortem findings of particularly interesting and instructive cases are discussed.
- 135dsu. Roentgenological-Surgical Conference. The films of all surgical patients presenting interesting roentgen findings are reviewed. Part of Course 135 (see also Radiology program.) Radiology and Surgery staffs.
- 135esu. Surgical Conference. Cases presenting interesting problems are presented and discussed. Part of Course 135. Surgery staff.
- 135gsu. Outpatient Surgical Clinic, General Surgery, and Proctology. Sections daily in the Outpatient Department. Part of Course 135. Dr. Wangensteen, Dr. Dennis, Dr. J. K. Anderson, Dr. W. A. Hanson, Dr. Lannin, Dr. Varco.
- 135gasu. Applied Surgical Anatomy. Weekly demonstrations in which by the use of dissections prepared by surgical fellows a systematic review of the regional anatomy of the major conditions coming with the purview of surgery and its specialties is presented. Part of Course 135. Surgery staff.
- 135hsu. Fractures and Traumatic Surgery. Under the supervision of the hospital staff the student participates in the care of fractures. Part of Course 135. (Minneapolis General Hospital.) Surgery staff.

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

- 137su. Outpatient Surgical Clinic, General Surgery, Special Surgery Clinics and Proctology. Sections daily in the Outpatient Department. (22 hrs.; 2 cred.; sr.) Surgery staff.
- 163su. Neurosurgery Clerkship. For seniors. The individual study of assigned patients on the neurosurgical service. History taking, examination, special studies, diagnosis and therapy are considered, with attendance at operations. Dr. Peyton and staff.
- 170su. Urology Clerkship. For seniors. The individual study of assigned patients on the urological service. History taking, examination, special studies, diagnosis and therapy are considered, with attendance at operations. Dr. Creevy and staff.
- 190su. Orthopedic Clerkship. For seniors. The individual study of assigned patients on the orthopedic service. History taking, examination, special studies, diagnosis and therapy are considered, with attendance at operations.

Elective Courses

- 139su. Operative Surgery. The student is permitted to participate in surgical procedures on hospital patients in the operating room. (Hrs. and cred. ar.) Staff.
- 152su. Problems in Clinical Investigations. A study of special case records correlated with literature study. (Hrs. and cred. ar.) Dr. Wangenstein, Dr. Creevy, Dr. Peyton, Dr. Dennis, Dr. Varco.
- 159su. Clinic in Traumatic Surgery. Juniors and seniors. (11 hrs.; Minneapolis General Hospital.) Dr. Zierold.
- 167su. Problems in Experimental Surgery. Students under supervision will investigate problems assigned to them. As their experience increases, they are permitted to do the operations incident to their problems. (Hrs. and cred. ar.) Dr. Wangenstein, Dr. Creevy, Dr. Peyton, Dr. Dennis, Dr. Varco.
- 168su. The Physiologic Pathology of Certain Aspects of Surgical Disease. Sixth year. (Hrs. and cred. ar.) Dr. Dennis, Dr. Varco.
- 169su. Diagnostic Bedside Surgical Clinic. At least four students must register if course is to be given. (Hrs. and cred. ar.; Minneapolis General Hospital.)

DIVISION OF ANESTHESIA

Required Courses

- 121bsu. Principles of Anesthesia. Part of Course 121. 5 lectures. Dr. Knight.
- 136esu. Individual Instruction in Anesthesia. Part of Surgical Specialties, Surgery 136.
- 136gsu. Clinical Conferences in Anesthesia. Part of Surgical Specialties, Course 136.

Elective Course

- 165su. Clinical Anesthesia. Selected students may spend additional time in the clinical administration of anesthetics. Dr. Knight.

Course for Undergraduate and Graduate Students

- 104su. Principles of Anesthesia. Lectures and conferences. (11 hrs.; 1 cred.) Dr. Knight.

SCHOOL OF NURSING†

FIRST TERM

- Nurs.Ed.60su. Ward Administration. Hospital organization and personnel; principles of administration and their application to ward management; analysis and maintenance of nursing service; selection, orientation, assignments and motivation of personnel; clinical teaching programs. (4 cred.; graduate nurses, senior five-year students; no prereq.; MTWF III, IV.) Mrs. Randall.

† For courses in Public Health Nursing see page 80.

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

- Nurs.Ed.62su. Personnel Program in Schools of Nursing. Survey of principles and techniques of personnel work applied to problems in schools of nursing. The relationship of such topics as individual differences, human behavior, personality, emotions, and intelligence to the problems of personnel guidance. Study of such techniques as psychological tests, personnel records, orientation periods, remedial programs, and counseling interviews in schools of nursing. (3 cred.; grad. nurses; no prereq.; MTWThFS II.) Miss Gordon.
- Nurs.Ed.72su. Principles of Teaching and Supervision in Schools of Nursing. Conditions favoring best preparation of the student nurse; sources, selection, and organization of subject matter; evaluation of nursing; content and methods of clinical teaching; testing of outcomes. (3 cred.; grad. nurses; no prereq.; MTWThF VI, M VII.) Ar.
- Nurs.Ed.73su. Principles of Economics in Nursing Service Administration. A study of the principles of business administration in their application to hospital organization and management. (1 cred.; grad. nurses; no prereq.; TTh VIII.) Miss Gorgas.
- Nurs.Ed.81su. Clinical Workshops. (Two weeks, June 12-24.) Workshops will be offered in the following fields: surgery, obstetrics, contagion, tuberculosis, introductory nursing, psychiatry, administration of schools of nursing. Graduate nurses interested in the program should notify the School of Nursing immediately. Each student will work on a project of her own choosing. A series of conferences and discussions in the various fields will be held for the entire group. Individual conferences will be arranged regarding individual work. (Note: An additional workshop in administration in schools of nursing will be offered later if the demand for it warrants.)
- Bact.53su. General Bacteriology. (5 cred.; no prereq.; lect. MTWThF I; lab. MTWThF II, III; ar.) Ar.

SECOND TERM

- Ed.T.51Asu.‡ Special Methods of Teaching in Schools of Nursing. (3 cred.; sr., grad.; prereq. or parallel Ed.51A-B; MTWThFS III.) Miss Harrington.
- Physiol.2su. Human Physiology. (4 cred.; no prereq.; lect. MTWThFS I; lab. TF III, IV.) Ar.

FIRST AND SECOND TERMS

(Classes for the college graduate entering the School of Nursing)

- Anat.3su. Elementary Anatomy (3 cred.; no prereq.; lect. MW VI; lab. MW VII, VIII.) Ar.
- Physiol.Chem.1su. Physiological Chemistry. (4 cred.; no prereq.; lect. TThF VI; lab. T VII, VIII.) Ar.
- Nurs.12su. Introduction to Nursing. (3 cred.; no prereq.; lect. ar.; lab. ar.) Ar.

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

COLLEGE OF PHARMACY

The College of Pharmacy offers a complete third quarter of junior and senior work. Registration will be for the quarter, not for the single term. The courses which will be offered are listed below along with their respective credit values. For descriptions of the courses, see Bulletin of the College of Pharmacy. Work in the first quarter of all four years will be offered in the fall quarter of 1944.

JUNIOR YEAR

- Pharmacog.57. Vegetable Drugs. (3 cred.) Mr. Fischer.
- Pharmacog.58. Biological Products. (2 cred.) Mr. Fischer.
- Pharm.57. Pharmaceutical Preparations. (4 cred.) Mr. Netz.
- Pharmaceut.Chem.56. Quantitative Chemistry. (4 cred.) Mr. Wilson.

SENIOR YEAR

- Pharm.60. Dispensing Pharmacy. (4 cred.) Mr. Almin.
- Pharm.63. Dispensary Practice. (1 cred.) Miss Bruce.
- Pharmaceut.Chem.58. Pharmaceutical Biochemistry. (3 cred.) Mr. Fischer, Mr. Wilson.
- Pharmaceut.Chem.162,163. Organic Medicinal Products. (6 cred.) Mr. Gisvold.

Tuition fees for the quarter are: resident \$37; nonresident \$54. Clock hour fee is: \$1.75 per hour for residents; \$2.50 per hour for nonresidents. The clock hour rate for academic elective subjects is higher. In addition there are the usual incidental fees.

SCHOOL OF DENTISTRY

The School of Dentistry is operating on the accelerated plan of four quarters a year thereby enabling a student to complete the four-year course in three calendar years. The summer quarter will begin on June 14 and close on August 25, 1944. Fees will be the same as for other quarters.

There will not be a freshman class entering in June, 1944 and applications are being received and acted upon for the next freshman dental class which will enter at the opening of the winter quarter on January 3, 1945.

For detail of courses and fees in dentistry, consult the Bulletin of the School of Dentistry.

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 during the present emergency should consult with elementary and secondary education advisers or with the dean's office, College of Education, concerning a program for renewal of certificates.

Students reading this section of the bulletin should note that under Curriculum and Instruction, Educational Administration, Educational Psychology, and Methods and Directed Teaching, the courses are grouped for those interested in elementary, secondary, and higher education fields. Under each division courses of general interest are listed *General Courses* and these are followed by the offerings in *Elementary Education*, *Secondary Education*, and *Higher Education*.

Professional courses in education presuppose completion of Junior College requirements in the University of Minnesota or the equivalent in colleges of similar grade elsewhere. Graduation from the advanced course of Minnesota state teachers colleges is accepted as equivalent. Students with this training may be admitted to any course for which they have satisfied the prerequisite.

For all general matters relating to admission, advanced standing, credits, honor points, curricula, and requirements for graduation, students should consult the College of Education Bulletin. Students expecting to become candidates for a degree should seek as early as possible the advice of the major adviser in the department concerned in order to learn the requirements of the special curriculum they will need to complete.

STUDENTS' WORK COMMITTEE

Undergraduate students with questions concerning program adjustments and substitutions for required work should consult their advisers or the chairman of the Students' Work Committee. The office of the chairman in the first term will be 206 Burton Hall (Miss Alexander), and in the second term, 202 Burton Hall (Miss Edwards).

WORKSHOP AND SPECIAL COURSES

Three workshops have been scheduled for the first term of the Summer Session. For the elementary school teachers, Ed.C.I. 187, Laboratory in Elementary Instructional Practices, has been planned as a workshop emphasizing the problems of rural and village teachers, with observation and group and individual projects. A second workshop for elementary teachers will be given by the Institute of Child Welfare under Ed.C.I. 131, emphasizing problems in child development. The third workshop has been planned for the higher education field, listed under Ed.C.I. 228. Students in this workshop will be working on problems of teacher education in the liberal arts colleges and teacher training institutions. In addition to these three workshops, a special course in education for post-war reconstruction, Ed. 150, will be offered jointly by two instructors. For detailed information see page 91.

In the second term, a two-week workshop on community and school health problems has been scheduled. Students may register under Ed.C.I. 127 or P.M.&P.H. 180. See page 95.

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

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, aviation, biology, history, social studies, shorthand, typing, industrial arts, music, home economics, and Spanish. The school is a six-year high school comprising grades seven to twelve. The courses are organized to provide individual attention to the needs and capacities of the pupils, and will be particularly adapted this summer to the war emergency.

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 Director'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 in other courses for demonstration purposes. (MTWThF I,II,III, MTWF IV.)

SUMMER DEMONSTRATION ELEMENTARY SCHOOL

An elementary school, grades one to six inclusive, will be in operation during the first term of the Summer Session. This school will be staffed by the principal and teachers of the Tuttle School and 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 will be conducted on an activity basis and may be observed by students of elementary school methods and supervision. Laboratory courses in elementary school practices are available. (See Ed.C.I. 186.) (MTWThF I, II, III, MTWF IV; Tuttle School, Talmadge Avenue and Eighteenth Avenue S.E.)

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 112. These schools are also available for demonstration and observation. Courses, offered by the institute and listed on page 112, are given for teachers who wish nursery school and kindergarten training or who are interested in child development.

MINIMUM FEE FOR GRADUATE STUDENTS

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

SPECIAL FEES

By action of the Board of Regents, a fee of \$1 per credit is charged for all courses concerned with methods or problems of teaching. These fees are used in the provision of demonstration and practice facilities, and are charged for any course in this classification, whether or not observation is required for that particular course. The curriculum

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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 23.)

GENERAL COURSES

FIRST TERM

- Ed.51Asu.†† Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed. 51C or consent of instructor; MTWThF VII; 109UHS.) Mr. Anderson.
- Ed.51Bsu.†† Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed. 51A or consent of instructor; MTWThF VI; 109UHS.) Ar.
- Ed.51Csu.†† Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWF IV and 1 hr. ar.; 100Pt.) Mr. Ekstrom.
- Ed.61Asu.‡§ Introduction to Elementary School Teaching. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWThF VII; 109UHS.) Mr. Anderson.
- Ed.150su. Education for Postwar Reconstruction. (3 cred.; sr.; MTWThF II; 206WeH.) Mr. Brameld, Mr. Lindblom.

SECOND TERM

- Ed.51Asu.†† Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed. 51C or consent of instructor; MTWThF V; 210UHS.) Mr. Van Wagenen.
- Ed.51Bsu.†† Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. Ed. 51A or consent of instructor; MTWThF VII; 210UHS.) Ar.
- Ed.51Csu.†† Introduction to Secondary School Teaching. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWThF VI; 109UHS.) Mr. Anderson.
- Ed.61Asu.‡§ Introduction to Elementary School Teaching. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWThF V; 210UHS.) Mr. Van Wagenen.

AGRICULTURAL EDUCATION

FIRST THREE WEEKS OF FIRST TERM, JUNE 12 TO JULY 3

- Agr.Ed.221su. Field Problems. Making investigations, gathering data, and formulating plans in regard to vocational agriculture. (3 cred.; grad.; 15 hrs. in ed.; ar.; 305Hort(UF).) Mr. Field.

† The entire course (Ed. 51A,B,C), including the final examination covering all three units, must be successfully completed before credit is allowed for this course. Exceptions will be made by the Students' Work Committee when credit is to be transferred to another institution, and for teachers who wish to take Ed. 51C to be used toward junior high school endorsement on an elementary certificate.

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

§ The entire course (Ed. 61A,B,C), including the final examination covering all three units must be successfully completed before credit is allowed for this course. Exceptions may be made by the Students' Work Committee when credit is to be transferred to another institution. Ed. 61A,B,C should not be taken by graduates of normal schools.

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

Agr.Ed.232su.* Research in Agricultural Education. Introduction to investigational work in problems of teaching agriculture in the high schools. Experience in selecting programs, preparation of bibliographies, analyzing and interpreting data, and preparing manuscripts. (Cred. ar.; grad.; prereq. 15 hrs. in ed.; lect. hrs. and individual work ar.; 301Hort(UF).) Mr. Field.

Agr.Ed.247su. Foundations of Methods in Teaching Agriculture. A study of the progressive philosophy which forms the basis for the current trends in the organization and methods of procedure in teaching agriculture and farm mechanics in the secondary schools. Emphasis on the problem of co-ordinating farm practice and the course of study activities of individual students. Emphasis on special teaching problems arising out of the war effort and postwar reconstruction. Evaluation of the results of learning, diagnosis of student difficulties, and planning remedial measures. (1 cred.; grad.; prereq. 15 hrs. in ed.; MTWThFS III; 301Hort(UF).) Mr. Field.

SECOND THREE WEEKS OF THE FIRST TERM, JULY 5 TO JULY 21

All the courses offered during the first three weeks will be repeated for the second three-week term.

ART EDUCATION

Registrants should consult the following advisers for assistance:

Elementary school curriculum registrants, freshmen and sophomores in other fields—
Mr. Gayne.

Juniors and seniors—Miss Lutz.

Students majoring in art education who wish to substitute any of the following courses for their major requirements in order to accelerate progress toward graduation should consult Miss Alexander, chairman of the Students' Work Committee.

In the studio practice courses listed below, the course number should be selected on the basis of the student's background, after consultation with the instructor.

FIRST TERM

ArtEd. 1, 2, or 3su. (Group A) Fundamental Experiences in Design. Selected design problems related to craft, recreation, and rehabilitation. (3 cred.; prereq. high school art or evidence of fitness; MTWF V-VI; 207bJ.) Miss Berglund.

ArtEd. 4, 6, or 8su. (Group C) Drawing from Still Life and Pose. (2 cred.; hrs. ar. during MWF III, IV, V, VI; 207J.) Miss Lutz.

ArtEd. 19su. (Group A) Art for Elementary Teachers. (3 cred.; no prereq.; MTWThF I-II; 203J.) Mr. Gayne.

ArtEd. 24, 26, or 28su. (Group C) Drawing and Painting from Still Life and Pose. (2 cred.; hrs. ar. during MWF III, IV, V, VI; 207J.) Miss Lutz.

ArtEd. 31 or 32su. (Group B) Orientation in Handcraft Processes. (3 cred.; no prereq.; MTWThF VII and laboratory hrs. ar.; 10-11J.) Miss Berglund.

ArtEd. 61, 62, or 63su. (Group C) Painting. (2 cred.; hrs. ar. during MWF III, IV, V, VI; 207J.) Miss Lutz.

ArtEd.84su.‡ (Group E) Teaching of Art in the Elementary Grades. Problems and methods of using art in elementary school teaching. (3 cred.; jr., sr.; prereq. consult instructor; MTWF IV and 1 hr. ar.; 203J.) Mr. Gayne.

ArtEd. 124, 125, or 126su. (Group C) Advanced Painting. (2 cred.; hrs. ar. during MWF III, IV, V, and VI; 207J.) Miss Lutz.

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

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

CURRICULUM AND INSTRUCTION

FIRST TERM

General Courses

- Ed.C.I.105su.‡ Visual Aids in Teaching. (3 cred.; jr., sr., grad.; MTWThF III; 101WeH.) Mr. Wendt.
- Ed.C.I.107su.‡ Radio in Education. (3 cred.; jr., sr., grad.; prereq. 9 cred. in ed.; MTWThF I; 302MurH.) Mr. Tyler.
- Ed.C.I.126su.‡ Principles and Practices in Health Education. (Also listed as P.M.&P.H. 124.) (3 cred.; prereq. experience in school nursing or as school superintendent, principal, or health education teacher; MTWThFS II; ar.) Miss Grout.
- Ed.C.I.129su.‡ Principles and Problems of Teaching Social Hygiene. (Also listed as P.M.&P.H. 129.) Emphasis will be placed on methods of teaching social hygiene in the public schools and materials for instructional use in the elementary and secondary schools. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed.; MTWThF VI; 360SBH.) Miss Biester, Dr. Pearce.
- Ed.C.I.145su.‡ Remedial Reading. (3 cred.; prereq. Ed.C.I. 143 or 144 or 159; MTWThF II; 106Pt.) Miss Swenson.
- Ed.C.I.271su.*‡ Problems in Curriculum Construction. (Cred. ar.; prereq. cred. or current enrolment in Ed.C.I. 113, 119, 170, or equiv., and consent of instructor; ar.) Mr. Bossing, Mr. Cook.
- Ed.C.I.273su.*‡ Problems in Reading. (Cred. ar.; prereq. consent of instructor; ar.) Miss Swenson.

Elementary Education

- Ed.C.I.102su.‡ Teaching the Social Studies in the Elementary School. (3 cred.; prereq. Ed. 61A-B-C or equiv.; MTWThF II; 100Pt.) Mr. Wesley.
- Ed.C.I.103su.‡ Teaching of Science in the Elementary School. Emphasis on resources and materials, and their application in elementary grades. (3 cred.; jr., sr.; prereq. Ed. 61A-B or teaching experience; MTWThF I; 210UHS.) Mr. Mork.
- Ed.C.I.119su.‡ Elementary School Curriculum. (3 cred.; sr., grad.; prereq. Ed. 61C or equiv.; MTWF IV and Th VII; 209EdH.) Mr. Cook.
- Ed.C.I.130su.‡ Problems in Childhood Education. (3 cred.; sr., grad.; prereq. 9 cred. in ed., including Ed.T. 55 or equiv.; MTWF IV and 1 hr. ar.; 5Pt.) Mrs. Fuller.
- Ed.C.I.131su.‡ Laboratory in Childhood Education and Child Development—Workshop. Special emphasis on meeting the needs of children in wartime. Credit will be allowed toward kindergarten or elementary education major. Also listed as C.W. 186. For details see p. 112. (9 cred.; sr., grad.; prereq. permission of director of Institute of Child Welfare; hrs. ar.; 5Pt.) Mrs. Fuller, Miss Headley.
- Ed.C.I.143su.‡ Teaching of Reading in the Elementary School. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 61A or equiv.; MTWF IV and observation and individual work ar.; 106Pt.) Miss Swenson.

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

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

- Ed.C.I.150su.‡ Supervision and Improvement of Instruction. (3 cred.; sr., grad.; prereq. Ed. 61C or equiv.; MTWThF III; 210Bu.) Mr. Brueckner.
- Ed.C.I.151su.‡ Diagnosis and Remedial Instruction. (3 cred.; sr., grad.; prereq. Ed.C.I. 150 or equiv.; MTWThF II; 210Bu.) Mr. Brueckner.
- Ed.C.I.186su.‡ Laboratory in Elementary Instructional Practices. Daily observation of elementary classes, with discussion of techniques, emphasis on activity unit, visual aids, enriched materials, individual differences, and socialized situations. Students enrolling in this course must carry at least one other course in the College of Education. (2 cred.; experienced teachers only; observation 4 hrs. weekly, MTWThF ar., Tuttle School; lecture TTh VI; 200Pt.) Mr. Staudenmaier.
- Ed.C.I.187su.‡ Laboratory in Elementary Instructional Practices. Workshop in rural and village school problems. A full program for six weeks; open to sixty applicants. Especially valuable for those renewing elementary certificates. Mornings, observation; afternoons, discussion of problems of elementary teaching, emphasizing diagnostic and remedial procedures, wider use of varied materials, socializing the learning process and planning for the needs of individual teachers. Special consideration of problems of teaching in village and rural schools. (9 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.) Mr. Ekstrom, Miss Wofford, and others.
- Ed.C.I.261su.*‡ Special Problems in School Supervision. (Cred. ar.; prereq. 10 cred. in ed. including Ed. 51A or 61A; ar.) Mr. Brueckner.

Secondary Education

- Ed.C.I.113su.‡ High School Curriculum. (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51A-B-C or equiv.; MTWThF II; 105UHS.) Mr. Bossing.
- Ed.C.I.122su.‡ Literature for Adolescents. (3 cred.; jr., sr., grad.; prereq. Ed. 51C or junior-senior high school teaching experience; MTWF IV and 1 hr. ar.; 210Bu.) Miss Smith.
- Ed.C.I.140su.‡ Teaching of Speech. (Also listed as Speech 151su.) Orientation in problems of speech education. Review of studies of teaching methods and special devices, voice recordings, tests. Direction of extra-curricular activities. (3 cred.; jr., sr., grad.; prereq. Speech 1-2-4 or Speech 5-6 or equiv. or permission of instructor; MTWThFS III; 301F.) Mr. Gilkinson.
- Ed.C.I.144su.‡ Teaching of Reading in Secondary Schools. (3 cred.; sr., grad.; prereq. 9 hrs. in ed. including Ed. 51A; MTWThF III; 106UHS.) Miss Handlan.
- Ed.C.I.168su.‡ Current Developments in the Social Studies. (3 cred.; grad. only; MTWThF III; 100Pt.) Mr. Wesley.
- Ed.C.I.170Bs.‡ Curriculum and Course of Study Construction. A study of the principles and methods for the selection and organization of units, courses of study, and curricula at the secondary school level. (3 cred.; sr., grad.; prereq. 113 or 119 and 170, or consent of instructor; MTWThF I; 200Pt.) Mr. Bossing.
- Ed.C.I.171su.‡ Curriculum Laboratory Practice. (2 to 6 cred.; sr., grad.; prereq. 170 or consent of instructor; ar.) Mr. Bossing.
- Ed.C.I.191su.‡ Advanced Course in the Teaching and Supervision of Secondary School Mathematics. (3 cred.; prereq. Ed. 51B or permission of instructor; MTWThF VI; 105UHS.) Mrs. Turner.
- Ed.C.I.201su.*‡ Problems in Teaching the Social Studies. (Cred. ar.; grad.; prereq. consent of instructor; ar.) Mr. Wesley.

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

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

- Ed.C.I.266su.‡ Supervision of High School Instruction. (3 cred.; grad.; MTWF IV and additional hours ar.; 210UHS.) Mr. Umstatted.
- Ed.C.I.287su.‡ Advanced Course in the Teaching of Science. (3 cred.; grad.; prereq. Ed. 51B; MTWThF II; 7UHS.) Mr. Johnson.
- Ed.C.I.294su.*‡ Advanced Course in Methods of Teaching English. (3 cred.; prereq. Ed.T. 66A-B-C or equiv.; MTWThF I; 106UHS.) Miss Smith.
- Ed.C.I.296su.*‡ Special Problems in Teaching English. (Cred. ar.; grad.; ar.) Miss Smith.

Higher Education

- Ed.C.I.228su.*‡ Workshop: Problems of Higher Education and Teacher Training. (9 cred.; grad.; MTWThF ar.; ar.) Mr. Peik, Miss Eckert, Mr. Cooper, and others.

SECOND TERM

General Courses

- Ed.C.I.104su.‡ Adult Education. (3 cred.; jr., sr., grad.; MTWF IV and 1 hr. ar.) 301 Lib.) Mr. Dickerman.
- Ed.C.I.107su.‡ Radio Education. (3 cred.; jr., sr., grad.; MTWThF I; 302MurH.) Mr. Tyler.
- Ed.C.I.127su.‡ Workshop in Community and School Health Education (July 24-August 5). Work on individual and group problems in the fields of community and school health education. Especially designed for teams of educational and health personnel from local communities. (Also listed as P.M.&P.H. 180.) (3 cred.; hrs. ar.) Miss Freeman, Miss Grout, Miss Starr, and others.
- Ed.C.I.129su.‡ Principles and Problems of Teaching Social Hygiene. Emphasis will be placed on methods of teaching social hygiene in the public schools and materials for instructional use in the elementary and secondary schools. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed.; MTWThF III; 360SBH.) Mr. Griffiths, Dr. Pearce.
- Ed.C.I.271su.*‡ Problems in Curriculum Construction. (Cred. ar.; prereq. completion or current enrolment in one of the following: Ed.C.I. 113, 119, 170, or consent of instructor; ar.) Mr. Bossing, Mr. Cook.

Elementary Education

- Ed.C.I.102su.‡ Contents and Activities of the Social Studies in the Elementary Grades. (3 cred.; prereq. Ed. 61A-B-C or equiv.; MTWThF III; 210UHS.) Mr. Wesley.
- Ed.C.I.119su.‡ Elementary School Curriculum. (3 cred.; sr., grad.; prereq. Ed. 61C or equiv.; MTWF IV and Th VII; 209EdH.) Mr. Cook.
- Ed.C.I.143su.‡ Teaching of Reading in the Elementary School. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 61A or equiv.; MTWThF I; 210Bu.) Miss Edman.
- Ed.C.I.150su.‡ Supervision and Improvement of Instruction. (3 cred.; sr., grad.; prereq. Ed. 61C or equiv.; MTWThF II; 210Bu.) Miss Edman.

Secondary Education

- Ed.C.I.113su.‡ High School Curriculum. (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51A-B-C or equiv.; MTWThF I; 106UHS.) Mr. Bossing.
- Ed.C.I.168su.‡ Current Developments in the Social Studies. (3 cred.; MTWThF II; 209UHS.) Mr. Wesley.
- Ed.C.I.169su.‡ Extracurricular Activities. (3 cred.; prereq. 10 hrs. in ed. including Ed. 51A; MTWThF II; 106UHS.) Mr. Bossing.

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

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

- Ed.C.I.171su.‡ Curriculum Laboratory Practice. (3 cred.; sr., grad.; prereq. Ed.C.I. 170 or consent of instructor; ar.) Mr. Bossing.
- Ed.C.I.201su.*‡ Problems in Teaching the Social Studies. (3 cred.; grad.; prereq. consent of instructor; ar.) Mr. Wesley.
- Ed.C.I.266su.‡ Supervision of High School Instruction. (3 cred.; grad.; MTWF IV and 1 hr. ar.; 210Bu.) Mr. Boardman.

EDUCATIONAL ADMINISTRATION

FIRST TERM

General Courses

- Ed.Ad.124su. Public School Administration. The organization, administration, and general support of public schools in state and local school districts. (3 cred.; sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 210Bu.) Mr. Neale.
- Ed.Ad.210su.* Financial Aspects of School Business Administration. Financial program planning, budgeting, accounting, cost finding, income and expenditure control, and the preparation and analysis of financial reports. (3 cred.; grad.; prereq. Ed.Ad. 124, 125; MTWThF II; 210UHS.) Mr. von Borgersrode.
- Ed.Ad.226su. School Plant Planning and Management. Plant program planning and financing, including operation and maintenance of public school buildings. (3 cred.; grad.; prereq. Ed.Ad. 124, 125; MTWThF III; 206WeH.) Mr. Neale.
- Ed.Ad.228su.* Special Problems in Educational Administration. For the summer of 1944 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. (3 cred.; grad.; prereq. Ed.Ad. 124, 125; MWF IV; 206WeH.) Mr. Neale.

Elementary Education

- Ed.Ad.115su. Organization of the Elementary School. Problems relating to the organization for instruction and classification of pupils in elementary schools with critical examination of current practices. (3 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 106Pt.) Mr. von Borgersrode.

Secondary Education

- Ed.Ad.133su. Guidance in Secondary Schools. (Also listed as Ed.Psy. 133.) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; MTWThF I; 209EdH.) Miss Wright.
- Ed.Ad.167su. Junior High School. (Not offered.) Elementary education majors who need this course for junior high school endorsement should substitute Ed. 51C. (See page 91.)
- Ed.Ad.265su. High School Administration. (3 cred.; grad.; MTWThF III and 1 hr. ar.; 210UHS.) Mr. Umstatt.
- Ed.Ad.270su.* Special Problems in Secondary Education. (Cred. ar.; prereq. consent of instructor; ar.) Mr. Bossing, Mr. Umstatt.

SECOND TERM

General Courses

- Ed.Ad.124su. Public School Administration. (3 cred.; sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 105UHS.) Mr. Neale.

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

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

- Ed.Ad.210su.* Financial Aspects of School Business Administration. (3 cred.; grad.; prereq. Ed.Ad. 124, 125; MTWThF II; 105UHS.) Mr. von Borgersrode.
- Ed.Ad.226su. School Plant Planning and Management. (3 cred.; grad.; prereq. Ed.Ad. 124, 125; MTWThF III; 105UHS.) Mr. Neale.
- Ed.Ad.228su.* Special Problems in Educational Administration. (3 to 6 cred.; grad.; prereq. Ed.Ad. 124, 125; MWF IV; 105UHS.) Mr. Neale.

Elementary Education

- Ed.Ad.115su. Organization of the Elementary School. (3 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 210UHS.) Mr. von Borgersrode.

Secondary Education

- Ed.Ad.133su. Guidance in Secondary Schools. (Also listed as Ed.Psy. 133su.) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; MTWThF VI; 210Bu.) Miss Edwards.
- Ed.Ad.264su. High School Administration. (3 cred.; grad.; MTW IV and individual work ar.; 210Bu.) Mr. Boardman.
- Ed.Ad.270su.* Special Problems in Secondary Education. (Cred. ar.; prereq. consent of instructor; ar.) Mr. Boardman, Mr. Bossing.

EDUCATIONAL PSYCHOLOGY

FIRST TERM

General Courses

- Ed.Psy.120su. Basic Principles of Measurement. (3 cred.; sr., grad.; prereq. Ed.Psy. 60 or equiv.; MTWThF II; 209EdH.) Mr. Cook.
- Ed.Psy.158su. Psychology of Adolescence. (3 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.; MTWThF III; 106Pt.) Miss Wright.
- Ed.Psy.216su. Statistical Methods in Education. (3 cred.; grad.; MTWF IV and 1 hr. ar.; 110UHS.) Mr. Johnson.
- Ed.Psy.233su.* Problems in Guidance and Personnel Work. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. Cook.
- Ed.Psy.253su.* Research Problems. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. Cook, Mr. Johnson.
- Ed.Psy.281su. Practice in Personnel Work: Guidance Clinic. (3 cred.; grad.; limited enrolment, admission by consent of instructor only; ar.; 101Ed.H.) Mr. Gordon Anderson.
- Ed.Psy.290-291su. Individual Differences. Graduate students may substitute Psy. 125-126su, Psychology of Individual Differences. (See page 41.)
- Ed.Psy.293su.* Psychology of Learning. (3 cred.; grad.; prereq. 12 cred. in psy. and ed. psy.; MTWThF VI; 210UHS.) Mr. G. Lester Anderson.

Secondary Education

- Ed.Psy.133su. Guidance in Secondary Schools. (3 cred.; sr., grad.; prereq. 9 cred. in ed.; MTWThF I; 209EdH.) Miss Wright.

SECOND TERM

General Courses

- Ed.Psy.60su. Introduction to Statistical Methods. (3 cred.; jr., sr.; prereq. 6 cred. in psy.; MTWThF III; 110UHS.) Mr. Johnson.

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

- Ed.Psy.120su. Basic Principles of Measurement. (3 cred.; sr., grad.; prereq. Ed.Psy.,60 or equiv.; MTWThF II; 209EdH.) Mr. Cook.
- Ed.Psy.159su. Personality Adjustments in Education. (3 cred.; sr., grad.; prereq. 9 hrs. in ed. and psy. including one recent course in psy.; MTWThF III; 206WeH.) Miss Holmstrom.
- Ed.Psy.217su. Statistical Methods in Education. (3 cred.; grad.; MTWThF II; 110UHS.) Mr. Johnson.
- Ed.Psy.233su.* Problems in Guidance and Personnel Work. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. Cook, Miss Edwards.
- Ed.Psy.253su.* Research Problems. (Cred. ar.; grad.; prereq. consent of instructor; individual work ar.) Mr. Cook, Mr. Johnson, Mr. Van Wageningen.
- Ed.Psy.293su.* Psychology of Learning. (3 cred.; grad.; prereq. 12 cred. in psy. and ed. psy.; MTWF IV and Th V; 210UHS.) Mr. G. Lester Anderson.

Elementary Education

- Ed.Psy.114su. Psychology of Elementary School Subjects. (3 cred.; jr., sr., grad.; prereq. 10 cred. in psy. and ed.; MTWThF II; 109UHS.) Mr. Van Wageningen.
- Ed.Psy.183su. Education of Gifted Children. (3 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.; MTWF IV and 1 hr. ar.; 109UHS.) Mr. Van Wageningen.

Secondary Education

- Ed.Psy.133su. Guidance in Secondary Schools. (3 cred.; sr., grad.; prereq. 9 cred. in ed.; MTWThF VI; 210Bu.) Miss Edwards.

HISTORY AND PHILOSOPHY OF EDUCATION

FIRST TERM

General Courses

- H.Ed.101su. Historical Foundations of Modern Education. (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy.; MTWThF III; 109UHS.) Miss Alexander.
- H.Ed.155su. History of Education in the United States. Emphasis on the development of elementary and secondary education in the nineteenth century; special movements; rise of state school systems. (3 cred.; jr., sr., grad.; MTWF IV and 1 hr. ar.; 109UHS.) Miss Alexander.
- H.Ed.176su. Conflicting Issues in Modern Education. (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy.; not open to students who have had H.Ed. 76; MTWThF I; 206WeH.) Mr. Brameld.

See also Ed. 150, Education for Postwar Reconstruction, page 91.

HOME ECONOMICS EDUCATION

FIRST TERM

- H.E.Ed.94su.†† Supervised Teaching in Home Economics. Observation and teaching experience under supervision. (3 cred.; ar.; prereq. H.E.Ed. 91, 93 or consent of the instructor; limited to twelve students; hrs. ar. including three consecutive hours daily for four days a week; 114HE(UF).) Miss Rose.

† 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, 102 University High School.

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

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

- H.E.Ed.191su. Advanced Course in the Teaching of Home Economics. A study of improved methods of teaching in the light of (1) the social and economic pressures on the American family, (2) recent investigations. This course offers the experienced teacher an opportunity to study problems related to her own situation at the secondary or higher education level. (3 cred.; sr., grad.; prereq. H.E.Ed. 91, 93 or consent of instructor; MTWThF I; 114HE(UF).) Miss Rose.
- H.E.Ed.192su. Evaluation in Home Economics. Evaluation as a means of measuring progress toward important goals in different areas of home economics; study of available tests and other evaluation materials; construction and refinement of various evaluating instruments. Study of elementary statistical techniques useful to home economics teachers. (3 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.; MTWThF III; 213HE(UF).) Miss Brown.
- H.E.Ed.193su. Home Economics Curriculum. Deals primarily with home economics at the secondary school level; evaluation of current practices and desirable modifications to meet present needs and those of the postwar period. (3 cred.; sr., grad.; prereq. H.E.Ed. 91 or high school teaching experience in home economics; MTWF VI, WF VII; 203HE(UF).) Miss Brown.

INDUSTRIAL EDUCATION

FIRST TERM

- Ind.101su. Tests in Industrial Subjects. (3 cred.; prereq. Ed.51A; MTWF IV and 1 hr. ar.; 202EdH.) Mr. Smith.
- Ind.103su. Instructional Aids. (3 cred.; sr., grad.; prereq. Ind. 40, 42; MTWThF III; 6aPt.) Mr. Hill.
- Ind.115su. Supervision of Industrial Education. (3 cred.; sr., grad.; prereq. Ind. 60, 80, Ed.Ad. 124 or consent of instructor; MTWThF I; 6aPt.) Mr. Hill.
- Ind.125su. Philosophy and Practice of Industrial Education. (3 cred.; sr., grad., or consent of instructor; MTWThF II; 202EdH.) Mr. Smith.
- Ind.200su.* Research Problems. Individual conferences only. (3, 6, or 9 cred.; graduates only; ar.) Mr. Smith.

SECOND TERM

Because of war conditions, particularly in this special field, no specific second term program is announced at this time. The University will attempt to meet any justifiable demand for courses or services during that period. Those desiring to attend in the second term are requested to write to Professor Homer J. Smith, 200 Eddy Hall, so that their intentions and suggestions may be known. They are invited to react to the possible scheduling of three-week, double-time units in the nature of workshop, conference, or project courses. Consideration will be given to such offerings in Foremanship, Conference Leading, Apprenticeship, State Syllabus in Industrial Arts, War Production Training, Co-ordination, Postwar Program, etc.

Shop and Drawing Courses

First degree candidates should keep in mind the maximum of 45 quarter credits in shopwork and drawing combined. More such credits may be earned and recorded but they will not be counted toward the degree. Shop and drawing courses may be pursued by graduate students, with credits recorded but without usefulness for advanced degree purposes. See other parts of this bulletin—Art Education, Agricultural Engineering, Drawing and Descriptive Geometry, Mechanical Engineering, and various other schedules

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of the Institute of Technology. The long-time co-operative arrangement, whereby courses may be taken at Dunwoody Institute, continues in effect.

Notes

Copies of the four-year curriculum, leading to the B.S. degree will be mailed upon request. Similarly, revised pages will be sent which announce entrance qualifications and completion requirements for the M.A. degree in the Graduate School and the more professional M.Ed. degree in the College of Education. Those who desire more advanced work are invited to open correspondence concerning their backgrounds and professional intentions. The Department of Industrial Education is federally-aided, many of its courses leading to certification for positions under Smith-Hughes, George-Deen, and War Production Training acts and regulations.

METHODS AND DIRECTED TEACHING

FIRST TERM

General Courses

Ed.T.52su.†† Practice Teaching. Open to students who wish to register for a limited number of credits in practice teaching to qualify for the secondary school certificate through the College of Education. (Cred. ar.; prereq. consent of instructor; ar.; UHS.) Mr. G. Lester Anderson.

Elementary Education

Ed.T.55su.† Principles of Early Childhood Education. (3 cred.; jr., sr.; prereq. Psy. 1-2; MTWThF I and 1 hr. ar.; 100Pt.) Ar.

Ed.T.57su.† Plastic Materials. (3 cred.; jr., sr.; prereq. Ed.T. 55; MTWThF VII and 1 hr. ar.; 202Pt.) Miss Headley.

Ed.T.59su.† Story Telling for Young Children. (3 cred.; jr., sr.; prereq. Ed.T. 55 or equiv.; MTWThF VI and 1 hr. ar.; 202Pt.) Ar.

Ed.T.76Asu.† Methods and Observation in the Nursery School. (2 cred.; jr., sr.; prereq. Ed.T. 55 or simultaneously; F IV and observation hrs. ar.; 204EPt.) Ar.

Ed.T.76Csu.† Methods and Observation in the Kindergarten. (2 cred.; jr., sr.; prereq. Ed.T. 55 or simultaneously; F IV and observation hrs. ar.; 204EPt.) Ar.

Ed.T.77A, or B, or Csu.† Directed Teaching. (4 cred.; sr.; prereq. Ed.T. 55, 56, 57, 59, and 76A, B, C. Offered by special arrangement on advanced application to a limited number of students.) Mrs. Fuller.

Secondary Education

Ed.T.66Amsu.†† The Teaching of Composition in the Senior High School. (2 cred.; sr.; MTWTh V; 206UHS.) Miss Handlan.

Ed.T.66Bmsu.†† The Teaching of Literature in the Senior High School. (2 cred.; sr.; MTWTh VI; 206UHS.) Miss Handlan.

Ed.T.67Am,Bmsu.†† The Teaching of Secondary School Mathematics. (4 cred.; sr.; MTWThF VI and individual work ar.; 105UHS.) Mrs. Turner.

† 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, 102 University High School.

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

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

Ed.T.68Am,Bmsu.†† Methods of Teaching Secondary School Science. (2 or 3 cred.; sr.; consult instructor; MTWThF II; 7UHS.) Mr. Johnson.

Ed.T.69Am,Bmsu.†† Methods of Teaching History and Social Studies. (4 cred.; sr.; MTWTh VI-VII; 211UHS.) Mrs. Merideth.

MUSIC EDUCATION

FIRST TERM

Mu.Ed.4‡, 5‡, or 6su.‡ Applied Instrumental Technique. (2 cred. each; no prereq.; MTWThF I; 4NMA.) Mr. Martino.

Mu.Ed.50Asu.‡ Primary Methods. (2 cred.; jr.; no prereq.; MTWF II; 4Mu.) Mrs. Nohavec.

Mu.Ed.54su.‡ Public Performance. (3 cred.; jr.; prereq. Ed.51A; MTWThF III; 4Mu.) Mrs. Nohavec.

Mu.Ed.68su. Conducting of Instrumental Music and Survey of Materials. (4 cred.; sr.; prereq. Mu.Ed. 65; MTWF IV and ar.; 4NMA.) Mr. Martino.

Mu.Ed.220Esu.§ Survey and Application of Research in Music Education. (3 cred.; prereq. Mu.Ed. 101; open to candidates for the M.Ed. degree in music education and others with consent of instructor; ar.) Mrs. Nohavec.

Mu.Ed.224Esu.§ Seminar and Individual Research Problems in Music Education. (Cred. ar.; prereq. consent of instructor; ar.) Mrs. Nohavec.

Mu.Ed.225Esu.††§ Advanced Applied Music. (Cred. ar.; prereq. entrance exam.; ar.) Ar.

† 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, 102 University High School.

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

†† Two lessons a week, fee \$25; four lessons a week, fee \$50.

§ Courses marked "E" carry credit toward the master of education degree.

PHYSICAL EDUCATION AND ATHLETICS

PHYSICAL EDUCATION FOR MEN

Credit for courses taken in the Summer Session will be given toward a regular teacher's certificate in physical education where the courses are included in the physical education major.

The gymnasium, tennis courts, baseball diamonds, running track, and handball and squash courts will be available to students in the Summer Session.

FIRST TERM

- 1su.† Sports Education. Physical fitness activities plus a variety of individual and team sports. (1 cred.; no prereq.; MTWThF VI, S IV; MTWThF VII, S IV; MTWThF VIII, S IV; CH.) Mr. Beise.
- 5A-Csu. Physical Education Activities. Calisthenics, conditioning drills, mimetics, corrective exercises, exhibition drills, story plays, and marching tactics. Stunts and play gymnastics. Individual and combination stunts with and without equipment, tumbling stunts, apparatus stunts. (2 cred.; no prereq.; MTWThF VI-VII; CH.) Ar.
- 7Csu. Recreational Games and Sports. Badminton, aerial darts, archery, horseshoes, table tennis, tennis, deck tennis, paddle tennis. (1 cred.; no prereq. MTWThF VII; CH.) Ar.
- 9su. Rhythms. (1 cred.; no prereq.; TTh VIII-IX; CH.) Ar.
- 63su. Organization and Administration of Physical Education. Problems of administration, organization, and supervision. Arrangement of program; schedule making; construction, equipment, and care of gymnasia and athletic fields. (3 cred.; jr., sr.; MTWThF IV; CH.) Mr. Piper.
- 73su.‡ Directed Teaching. Observation and practice in teaching physical education classes. (2 cred.; sr.; M V and 11 hrs. ar.; CH.) Mr. Piper.
- 101su. Principles of Physical Education. A study of the aims, scope, and biological aspects of physical education with special treatment of its place in education. (3 cred.; jr., sr.; MTWThF III; CH.) Mr. Keller.
- 133Esu.§ 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.; sr., grad.; MTh V; CH.) Mr. Nordly.
- 134Esu.§ The Curriculum in Physical Education in Secondary Schools. 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.; sr., grad.; MTWThF VI; CH.) Mr. Nordly.
- 237Esu.§ Problems in Physical Education. Individual study for those who are interested in solving a problem in physical education. (Cred. ar. (2 to 6 cred.); hrs. ar.; CH.) Mr. Nordly.

SECOND TERM

- 2su.† Sports Education. (Same as first term.)

† This course will take the place of one quarter of physical education as required in General College, College of Education, and College of Science, Literature, and the Arts.

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

§ Courses marked "E" carry credit toward the degree of master of education.

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

PHYSICAL EDUCATION FOR WOMEN

In both terms of the Summer Session of 1944, the department will stress fitness procedures in all courses as well as interpretation and adaptation of the various manuals issued recently by the U. S. Office of Education for the secondary and college levels.

Those interested in teaching physical education in the state of Minnesota must qualify on 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, 5, 10, 13, 16, 18, 37, 52, and 53.
2. Courses applying to the state minor in physical education are: Phys.Ed. 4, 5, 10, 13, 16, 18, 37, 51, 52, 53, 63, 64, 65, 84, 90, and 116.
3. Courses applying to the undergraduate major in physical education are: Phys.Ed. 5, 10, 13, 18, 37, 63, 64, 65, and 84.
4. Courses applying to the degree of master of education with a major in physical education are: Phys.Ed. 111E, 112E, 113E, 114E, and 116E.

STUDENT TEACHING

The opportunity of teaching in the University Demonstration School is presented to those who can satisfy the one-credit student teaching requirement of the minor, only in the Summer Session. Integration of the physical education program with the regular classroom program is featured wherever possible. Student teaching in the form of directed observation, assistance, and substitution for the regular teacher is carefully supervised.

FACILITIES FOR RECREATION

The swimming pool is open for recreational use from 4:30 to 5:45 p.m. Monday through Thursday during both the first and second terms.

The university tennis courts and the university golf course are open to students.

FEES

Tickets for the rental of suits and towels for swimming are 10 cents apiece. The charges for tennis are \$1 for each term and for golf 50 cents for 18 holes (45 cents if one buys a coupon book of ten tickets.) Towels for shower bath may be procured from the matron for 5 cents apiece.

The maximum course fee for students taking two or more courses in physical education is \$3.50 per term.

PHYSICAL EXAMINATION

It is recommended that every woman student avail herself of the opportunity offered by the Students' Health Service for a physical examination. Everyone, but especially a teacher, should learn her health status at this time. The Department of Physical Education for Women strongly urges every person who is taking as many as three activity courses to make an appointment at once for a physical examination at the Health Service.

FIRST TERM

- 4su.‡ Fundamentals of All Rhythmic Work. (1 cred.) (Not offered in 1944.)
 5su.‡ Methods of Coaching and Conducting Organized Games for the Junior and Senior High School. (2 cred.) (Not offered in 1944.)
 7su.‡ Tennis for Beginners. (½ cred.; no prereq.; MWF V; 151NGW.) Miss Jaeger.

‡ A fee of \$1.75 is charged for this course.

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

- 8su.‡ Golf for Beginners. Limited to 20. ($\frac{1}{2}$ cred.; no prereq.; TTh V and 1 hr. ar.; 60NGW.) Miss Jaeger.
- 9su.‡ Elementary-Intermediate Golf. ($\frac{1}{2}$ cred.) (Not offered in 1944.)
- 10su.‡ Teachers' Course in Fundamentals of Physical Education. (1 cred.) (Not offered in 1944.)
- 11su.‡ Modern Dance. (1 cred.) (Not offered in 1944.)
- 12su. Social Recreation. This course is planned for those who need help with elementary skills in ballroom or country dancing, mixers, and recreational games for entertainment; help will also be given in planning informal social occasions for community and school groups. (1 cred.; no prereq.; MTWTh VI and 1 hr. ar.; 151NGW.) Mrs. Kane.
- 13su.‡ Tumbling, Stunts, and Pyramids for Junior and Senior High Schools. Instruction and practice in technique of individual, companion, and group tumbling and stunts with progression from elementary to more advanced. Discussion and application of principles underlying pyramid building. Self-testing activities and track and field events for girls of junior and senior high school age. (1 cred.; no prereq.; MTWTh II and 1 hr. ar.; 153NGW.) Miss Snell.
- 16su.‡‡ Elementary Tap and Social Dancing. (1 cred.) (Not offered in 1944.)
- 18su.‡ Elementary Folk Dancing and Games. (1 cred.) (Not offered in 1944.)
- 32su.‡‡ Elementary Swimming. (1 cred.) (Not offered first term.)
- 33su.‡‡ Intermediate and Advanced Swimming. This is a course for those who can swim in deep water. Instruction in the following is included: the crawl, side stroke and back crawl, personal water safety skills, diving. The class will be divided into groups according to the ability, interests, and experience of the swimmers. (1 cred.; prereq. permission of instructor; MTWThF VII; 58NGW.) Miss Jaeger.
- 37su.‡ Individual and Dual Games. This course deals with the various methods and techniques suitable for the teaching of the following sports: table tennis, archery, badminton, deck tennis, tether ball, shuffleboard. Consideration of group methods adaptable to the organization and teaching of these activities on the junior and senior high school level. The course consists of lectures and laboratory work. (1 cred.; no prereq.; MTWTh III and 1 hr. ar.; 153NGW.) Ar.
- 41su.‡ Team Sports—Fieldball, Soccer, Speedball, Volleyball, Basketball, Softball. Instruction in individual skills, team tactics, and position play. Choice of three of the above games will be given the class. (1 cred.; no prereq.; MTWTh III and 1 hr. ar.; 151NGW.) Miss Snell.
- 51su. School Health and Safety Education. (2 cred.) (Not offered in 1944.)
- 52su. Principles and Curriculum of Physical Education. In this course principles of philosophy, curriculum, method, and evaluation are studied in the light of their psychological, biological, and social significance. (2 cred.; prereq. permission of instructor; MTWTh VI; 201NGW.) Miss Baker.
- 53su. Organization and Administration of Physical Education. (2 cred.) (Not offered in 1944.)
- 63su.‡‡ Technique of Folk Dancing. (1 cred.) (Not offered in 1944.)
- 64su.‡‡ Technique of Teaching Group Gymnastics. A study is made of the principles of progression and methods of teaching gymnastics. Student teaching is done within the group. (1 cred.; prereq. permission of instructor; MTWTh VII and 1 hr. ar.; 153NGW.) Ar.

† 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.

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

- 65su.†† Integration of Special Methods. (2 cred.) (Not offered in 1944.)
- 73su.†† Technique of Teaching Rhythm. A study of the methods of teaching all types of rhythmic activities. Opportunity will be given to class members to apply the methods to different types of dance as well as to rhythmic exercises for conditioning or for sport activity. (1 cred.; MTWF IV and 1 hr. ar.; 151NGW.) Miss Baker.
- 83su. School Health Education, Methods, and Content. Study of principles, materials, and problems of health education in preparation for health teaching. Observation in techniques of school health instruction. Allocation and gradation of health subject matter, study of health needs of school children. Evaluation of school health instruction. (3 cred.; prereq. permission of instructor; MTWThF II and 1 hr. ar.; 201NGW.) Miss Starr.
- 84su. Problems in Physical Education: Fitness Standards for Elementary and Secondary Schools. Study of practical standards for physical fitness—actual experience and class discussion. (2 cred.; prereq. experience on elementary or secondary levels; MTWTh V; 201NGW.) Miss Snell.
- 90su.†† Student Teaching. An opportunity of teaching elementary school children and assisting in college classes will be provided for those who must meet a student teaching requirement in the summer. (1 cred.; prereq. 3 cred. of teaching techniques and Phys.Ed. 65; hrs. ar.) Ar.
- 112Esu.§ 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.; MTWThF III and 1 hr. ar.; 201NGW.) Miss Baker.
- 113Esu.§ Physical Education in the Elementary Schools. (3 cred.) (Not offered first term.)
- 114Esu.§ The Administration of the School Health Education Program. (3 cred.) (Not offered first term.)
- 116Esu.§ Problems in Physical Fitness. Analysis of current physical fitness problems on the elementary, secondary, and college levels in relation to health, physical education, and recreation. Undergraduates with sufficient background in physical education may register for the course. The number of credits allowed will depend upon the type of individual problem studied. (1 to 3 cred.; prereq. permission of instructor; MTWF IV, and 1-2 hrs. ar.; 201NGW.) Miss Starr.

SECOND TERM

- 32su.†† Elementary Swimming. Class instruction given. Sections limited to 25. (1 cred.; prereq. phys. exam.; MTWThF V; 58NGW.) Miss Starr.
- 37su.† Individual and Dual Games. This course deals with the various methods and techniques suitable for the teaching of the following sports: archery, table tennis, badminton, deck tennis, tether ball, shuffleboard. Consideration of group methods adaptable to the organization and teaching of these activities on the junior and senior high school level. The course consists of lectures and laboratory work. (1 cred.; no prereq. MTWTh VII and 1 hr. ar.; 153 NGW.) Ar.

† 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.

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

- 53su. Organization and Administration of Physical Education. Study of care and use of facilities and equipment; organization of the physical education program from the standpoint of classification of the students, appraisal of activities, management of class. Relationship of physical education program to community. (2 cred.; prereq. permission of instructor; MTWTh II; 201NGW.) Miss Baker.
- 64su.‡‡ Techniques of Teaching Group Gymnastics. A study is made of the principles of progression and methods of teaching gymnastics. Student teaching is done within the group. (1 cred.; prereq. permission of instructor; MTWTh VI and 1 hr. ar.; 153NGW.) Ar.
- 65su.‡‡ Integration of Special Methods. (2 cred.) (Not offered in second term.)
- 83su. School Health Education, Method and Content. (3 cred.) (Not offered in 1944.)
- 84su. Problems in Physical Education: Fitness Standards for Elementary and Secondary Schools. (2 cred.) (Not offered second term.)
- 112Esu.§ Supervision of Physical Education. (3 cred.) (Not offered second term.)
- 113Esu.§ Physical Education in the Elementary Schools. The course deals primarily with the elementary school curriculum, with adaptations of instructional procedures necessary in the elementary grades, with problems of classification and evaluation, and with the influences of modern educational thinking upon problems commonly met at this level. (3 cred.; MTWThF V and 1 hr. ar.; 201NGW.) Miss Baker.
- 114Esu.§ The Administration of the School Health Education Program. Study of various health organizations in city and state in relation to the school health program; organization of the health education programs with the school; construction of the curriculum in school health; evaluation of the school health education program; preparation and requirements for teaching school health education; health supervision and guidance. (3 cred.; MTWThF III and 1 hr. ar.; 201NGW.) Miss Starr.

‡‡ 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 23.)

FIRST TERM

Econ.3su. Elements of Money and Banking. The basic principles of money and a description of the various types of financial institutions, their functions and relations to the whole economic organization. (3 cred.; 2nd and 3rd qtr. fr., soph., jr., sr.; no prereq.; MTWThF V and 1 hr. ar.; 205VH.) Mr. Graves.

Econ.5su. Elements of Statistics. Elementary concepts in statistical method; averages, ratios, errors, sampling, index numbers, graphic representation, collection of material. (3 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq.; MTWFS IV and 1 hr. ar.; 205VH.) Mr. Graves.

Econ.6su. Principles of Economics. A course in the fundamental principles of economics intended to serve as a foundation for advanced courses in business administration and economics. (3 cred.; soph., jr., sr.; no prereq.; MTWThFS II; 6VH.) Mr. Myers.

Econ.32su.‡ Beginning Typewriting. Keyboard technique for touch typing; letter arrangement; personal use factors. (1 cred.; fresh., soph., jr., sr.; no prereq.; MTWThFS I and MWF VI; 209VH.) Miss Polson.

Econ.33su.‡ Intermediate Typewriting. Speed development; arrangement of material; dictating machine transcription; personal use factors. (1 cred.; fresh., soph., jr., sr.; prereq. Econ. 32 or consent of instructor; MTWThFS I and MWF VI; 209VH.) Miss Polson.

‡ A fee of \$2.50 is charged students registering for one or more of these courses each term.

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

- Econ.39su.‡ Intermediate Shorthand. Vocabulary 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; MTWThFS II and MWF VII; 211 VH.) Miss Polson.
- B.A.54su.† Elementary Accounting: Combined Course. The financial statements; analysis of transactions; recording; special books and journals; adjusting and closing entries; worksheets; capital stock; surplus and reserves; funds. (4 cred.; jr., sr.; no prereq.; MTWThFS III and M VI-VIII; 6VH.) Mr. Ostlund.
- B.A.71su. Transportation: Services and Charges I. A survey of rail, highway, air, and water transportation facilities, services, rates, and regulation, supplemented by lectures on current transportation problems. (3 cred.; jr., sr.; prereq. Econ. 6-7; MTWThFS I; 2VH.) Mr. Nightingale.
- B.A.86su. Office Management. Organization and control of office services; analysis of routines and flow of work; office layout; selection of equipment and personnel; form design. (3 cred.; jr., sr.; prereq. consent of instructor; MTWThFS III; 221VH.) Miss Donaldson.
- B.A.89su. Production Management. Location and layout of industrial plants; types of operating organization; shop personnel; standards of operation; purchasing and inventory control; routing, scheduling, and dispatching of product; scientific management; practical problems in production control. (3 cred.; jr., sr; no prereq.; MTWFS IV and 1 hr. ar.; 6VH.) Mr. Thompson.
- B.A.91su. Tabulating Equipment Laboratory. The basic functions of tabulating equipment; illustrations of its use in special accounting, statistical and production analysis; and its use for general accounting and statistical control of business operations. (1 cred.; jr., sr.; prereq. Econ. 26 and either Econ. 5 or B.A. 70; ThFS II; 7VH.) Mr. Peterson.
- B.A.96su. Business Equipment Laboratory. How to operate and use modern business machines. (1 cred.; jr., sr.; prereq. Econ. 26; open to commercial education majors only; MWF IV; 7VH.) Mr. Peterson.
- B.A.101su. 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; MTWThFS II; 2VH.) Mr. Garver.
- B.A.130su.‡ Cost Accounting Survey. A general survey of cost accounting from the point of view of the executive who must use cost information in the conduct of his business. (3 cred.; jr., sr., grad.; prereq. Econ. 25-26; MTWThFS I; 6VH.) Mr. Ostlund.
- B.A.142su. Advanced Money and Banking. (For the Summer Session this course is the equivalent of Econ. 141.) The problems of a central bank and the theory of the value of money. Includes control of reserves, providing a scientific currency, regulation of credit; fluctuations of the general price level—their causes and possible reduction. (3 cred.; jr., sr., grad.; prereq. Econ. 3 and either 6-7 or 83; MTWThFS III; 2VH.) Mr. Peterson.

† B.A.54-55 is a combination of Econ. 20 and 25-26.

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

‡‡ A fee of \$2.50 is charged students registering for one or more of these courses each term.

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B.A.146su. Investments. A general survey of the external and internal factors influencing the prices of securities and of the principles of an investment policy for the needs of the average conservative investor. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWThFS III; 205VH.) Mr. Stehman.

Econ.149su.* Business Cycles. Analysis of factors involved in business fluctuations. Comparison of theories of the cause of prosperity and depression. Introduction to the statistical data and methods of business forecasting. (3 cred.; sr., grad.; prereq. Econ. 141 or B.A. 142 or consent of instructor; MTWThFS I; 205VH.) Mr. Myers.

B.A.155su. Corporation Finance: Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporation. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWThF V and 1 hr. ar.; 221VH.) Mr. Stehman.

B.A.170su.‡ 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; MTWThF V, ThF VI; 301VH.) Mr. Thompson.

Econ.175su. 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; MTWThFS IV and 1 hr. ar.; 2VH.) Mr. Garver.

B.A.180Esu. Secretarial Topics (English Applied to Business). Critical analysis of current business correspondence; situation problems requiring persuasive writing. (3 cred.; jr., sr.; prereq. consent of instructor; MTWThFS I; 221VH.) Miss Donaldson.

Econ.189su. Principles of Taxation. (For the Summer Session this course may be substituted for B.A. 58.) Development of taxation; property, income, commodity, sales, inheritance, and other taxes; shifting incidence and other effects; federal, state, and local relations; special problems. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWThFS II; 221VH.) Mr. Nightingale.

NOTE—A student may not receive credit for both Econ. 189 and Econ. 191-192.

SECOND TERM

Econ.7su. Principles of Economics. A continuation of Econ. 6su. (3 cred.; soph., jr., sr.; prereq. Econ. 6; MTWThFS II; 6VH.) Mr. Lindblom.

Econ.33su.‡‡ Intermediate Typewriting. Speed development; arrangement of material; dictating machine transcription; personal use factors. (1 cred.; fr., soph., jr., sr.; prereq. Econ. 32 or consent of instructor; MTWThFS I and MWF VI; 209VH.) Mrs. Bentson.

Econ.34su.‡‡ Advanced Typewriting and Machine Transcription. Tabulation; rough draft; dictating machine transcription practice; operation of duplicating machines. (1 cred.; soph., jr., sr.; prereq. Econ. 33, two years of high school typewriting or consent of instructor; MTWThFS I and MWF VI; 209VH.) Mrs. Bentson.

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

‡‡ A fee of \$2.50 is charged students registering for one or more of these courses each term.

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- Econ.43su.†† Advanced Shorthand Theory. Gregg shorthand theory applied to a vocabulary of 10,000 most-used shorthand terms; references to technical vocabularies; blackboard writing experience; dictation experience. (2 cred.; soph., jr., sr.; prereq. Econ. 33 and 39 and consent of instructor; MTWF II; 221VH.) Mrs. Bentson.
- B.A.55su.† Elementary Accounting: Combined Course. Bonds and amortization, sinking funds, determination of income, depreciation, intangibles, inventories. (4 cred. jr., sr.; prereq. B.A. 54; MTWThFS III and M VI-VII; 6VH.) Mr. Reighard.
- B.A.102su. Advanced General Economics. (A continuation of B.A. 101su. For the Summer Session this course is the equivalent 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; MTWThFS I; 2VH.) Mr. Mudgett.
- B.A.112su.‡ Business Statistics. Survey and criticism of methods used in analyzing time series, with special applications to the study of cyclical fluctuations of economic phenomena. (3 cred.; jr., sr., grad.; prereq. Econ. 5 or B.A. 70; MTWThFS II; 2VH.) Mr. Mudgett.
- B.A.134su. Income Tax Accounting. The principles involved in determining taxable net income and the computation of federal and state income taxes for corporations, individuals, and trusts. (3 cred.; jr., sr., grad.; prereq. B.A. 139 or 150-151; MTWThFS II; 205VH.) Mr. Reighard.
- B.A.139su.*‡ Advanced General Accounting. A course intended particularly for the general student of business. Interpretation of accounts and statements; statement preparation and analysis. Utilization of the statements by the executive. Accounting methods and statements in a number of business fields. (3 cred.; jr., sr., grad.; prereq. Econ. 25-26; MTWThFS III; 205VH.) Mr. Heilman.
- Econ.161su. Labor Problems and Trade Unionism. A discussion of employment, hours, wages, types of unionism, policies and practices of labor organization. Special emphasis upon economic implications of modern working conditions. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWFS IV and 1 hr. ar.; 2VH.) Mr. Lindblom.
- B.A.167su. Personnel Administration. Evaluation of managerial policies and devices designed to secure the co-operation 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; MTWThFS III; 2VH.) Mr. Yoder.
- Econ.178su. Consumer Economics. A course dealing with the origins and distribution of income; consumer patterns of various social and economic groups; control and regulation of the marketing processes; the elements that enter into the prices of consumer goods; the present status and growth of the consumer movement. Of interest to general students of political economy and, especially, to teachers of social science and commercial education in secondary schools. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWFS IV and 1 hr. ar.; 221VH.) Mr. Vaile.

† B.A.54-55 is a combination of Econ. 20 and 25-26.

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

†† A fee of \$2.50 is charged students registering for one or more of these courses each term.

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B.A.180Dsu.* Senior Topics: Personnel Management. Discussion of personnel problems exemplified in cases, together with individual investigations of various phases of personnel administration. Special attention to actual conditions in the Twin City area. (3 cred.; sr., grad.; MTWThFS I; 221VH.) Mr. Yoder.

Econ.185su. Economics of Marketing. (For the Summer Session this course may be substituted for B.A. 77.) A course dealing with (1) the role of market distribution in our total economy; (2) the costs of market distribution; (3) regional specialization and market distribution; (4) public, quasi-public, and corporate control of market distribution; (5) the role of the consumer in market distribution. (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83; MTWThF V and 1 hr. ar.; 221VH.) Mr. Vaile.

INSTITUTE OF CHILD WELFARE

The Institute of Child Welfare was organized for three purposes: research in child development; the training of future workers with children; and bringing to the people of the state information on the care and training of children by means of a parent education program. The institute offers graduate and undergraduate courses, some of which are in co-operation with the College of Education, 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 9:00 a.m. to 1:00 p.m. beginning June 14 and closing July 21. Applications for the enrolment of children will be received at the office of the institute. The fee will be \$20 for tuition, which includes orange juice and lunch at noon. A few additional children can be accommodated from 9:00 to 11:45 a.m., with no lunch served but including orange juice at a tuition fee of \$15. Because of war restrictions, responsibility for transportation to and from the schools must be taken by the parents.

FIRST TERM

- 80su. Child Psychology. (3 cred.; jr., sr.; prereq. Psy. 1-2; MTWFS IV and 1 hr. ar.; 202Pt.) Mrs. Cummings.
- 140su. Behavior Problems in Younger Children. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; MTWThFS III; 202Pt.) Mr. Harris.
- 150su.‡ Problems of Childhood Education. (Same as Ed.C.I. 130.) (3 cred.; sr., grad.; prereq. 12 cred. in ed.; MTWFS IV and 1 hr. ar.; 5Pt.) Mrs. Fuller.
- 170su. Parent Education. (3 cred.; sr., grad.; prereq. 12 cred. in child welfare or home econ. or ed. or psy. or soc. or prev. med.; MTWThFS II; 202Pt.) Mrs. Cummings.
- 185su. Children in Wartime. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed., or soc.; MTWThFS I; 5Pt.) Mr. Harris.
- 186su.‡ Laboratory in Childhood Education and Child Development. (Same as Ed.C.I. 131.) Workshop. A full program for six weeks open to 50 applicants. Each student will be required to attend C.W. 150 (Ed.C.I. 130) Problems of Childhood Education or another approved course (3 cred.). For the remaining six credits the students will be in a workshop divided into special interest groups, but also working as a whole. Independent study, conferences, observations, group work, etc., under the supervision of Mrs. Fuller and Miss Headley. Observation in the Nursery School, Kindergarten, child care centers, and the Demonstration School. (9 cred.; sr., grad.; prereq. permission of the director of the Institute of Child Welfare to whom advance application should be made; hrs. ar.; 5Pt.) Mrs. Fuller, Miss Headley.
- 270su.* Readings in Child Development. (Cred. ar.; grad. students only; hrs. ar.) Mr. Anderson.

The following courses: Ed.T. 55su, Principles of Early Childhood Education; Ed.T. 57su, Plastic Materials; Ed.T. 59su, Story Telling for Young Children; Ed.T. 76Asu, Methods and Observation in the Nursery School; Ed.T. 76Csu, Methods and Observation in the Kindergarten; Ed.T. 77A,B, or Csu, Directed Teaching, listed under Methods and Directed Teaching on page 100; and Ed.C.I. 130su, Problems in Childhood Education, and Ed.C.I. 131su, Laboratory in Childhood Education and Child Development, listed on page 93, are also offered by the Institute of Child Welfare.

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

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

SECOND TERM

- 40su. Child Training. (3 cred.; soph., jr., sr.; prereq. Psy. 1-2; MTWThFS II; 202Pt.)
Ar.
- 132su. Development of the Elementary School Child. (3 cred.; sr., grad.; prereq. 12 cred. in psy., or ed. psy.; MTWThFS III; 202Pt.) Mrs. Maurer.
- 141su. Behavior Problems in Older Children. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.; MTWThFS I; 202Pt.) Mrs. Maurer.
- 270su.* Readings in Child Development. (Cred. ar.; grad. students only; hrs. ar.) Mrs. Maurer.

LIBRARY INSTRUCTION

Academic credit is given only to students with at least two full years of approved work of collegiate grade. Candidates for a degree in library instruction must have had at least *three* years of approved work of collegiate grade in addition to a full year (45 quarter credits) in Library Instruction. "No credit" students will be admitted on presentation of a letter from the library board or director by whom the applicants are employed, or on approval of the director of the Division of Library Instruction. Admission of "no credit" students is limited to candidates under appointment or promise of appointment to definite library positions.

FIRST TERM

- 52su. Cataloging. Elements of dictionary cataloging. Lectures, problems, and practice. Required of all candidates for a degree in library methods. Accepted toward an endorsement. (3 cred.; no prereq.; MTWThF VI and M VII; 5Lib.) Miss Hutchinson.
- 54su. Classification. Classification by the Dewey Decimal System, author numbers, shelf and accession records. Required of all candidates for a degree. (3 cred.; no prereq.; MTWThFS I; 5Lib.) Miss Hutchinson.
- 57su. Secondary School Libraries. Administrative methods and problems, including methods of teaching the use of the library. (3 cred.; prereq. 9 cred. in library methods; MTWFS IV and 1 hr. ar.; 5Lib.) Miss Hayner.
- 58su. Public Library Administration. Administration, equipment, finance, and extension work of public libraries. (3 cred.; prereq. 9 cred. in library methods; MTWThFS I; 3Lib.) Mr. McDiarmid.
- 62su. Reference. Reference books and other material with emphasis on methods of search and adaptation of material to needs of users. Required of all candidates for a degree in library methods. (3 cred.; no prereq.; MTWThFS II; 5Lib.) Mr. Strout.
- 64su. Selection of Books for Adolescents. Principles of selection and criticism of representative books. Study and preparation of book lists for adolescents in school and public libraries. (3 cred.; MTWThFS III; 5Lib.) Miss Hayner.
- 68su. Circulation Work. Lending systems and records. Library publicity. (1 cred.; prereq. 9 cred. in library methods; TTh VI; 3Lib.) Mr. Strout.
- 72su. Library Work with Children. Continuation of Lib.Meth. 71. Further discussion of administration of children's rooms and book selection. (3 cred.; prereq. Lib.Meth. 71; MTWThFS II; 3Lib.) Miss McLaughlin.
- 73su. Selection of Books for Adults. Principles of selection and criticism of representative books. Criticism and preparation of book lists. (2 cred.; no prereq.; MTWFS IV; 3Lib.) Mr. Strout.

FACULTY

Because of the exigencies of war this list or any individual in it is subject to change without notice.

GRADUATE SCHOOL

Wilford S. Miller, Ph.D., Acting Dean

(The faculty of the Graduate School is included among those listed under the various schools and colleges.)

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

T. Raymond McConnell, Ph.D., Dean

ANTHROPOLOGY

Wilson D. Wallis, Ph.D., Professor

ASTRONOMY

Willem J. Luyten, Ph.D., Professor

BOTANY

Ned L. Huff, M.A., Assistant Professor

CLASSICS

Marbury B. Ogle, Ph.D., Professor

John L. Heller, Ph.D., Assistant Professor

ENGLISH

Tremaine McDowell, Ph.D., Professor

Robert Penn Warren, Litt.B., M.A., Professor

William Robbins, Ph.D., Victoria College, Victoria, B.C., Canada, Professorial Lecturer

James T. Hillhouse, Ph.D., Associate Professor

John T. Flanagan, Ph.D., Assistant Professor

Lewis B. Hessler, Ph.D., Assistant Professor

Elizabeth Jackson, Ph.D., Assistant Professor

Anna H. Phelan, Ph.D., Assistant Professor

FINE ARTS

Laurence E. Schmeckebier, Ph.D., Associate Professor

Jean Vincent, B.A., Teaching Assistant

GEOGRAPHY

Darrell H. Davis, Ph.D., Professor

Ralph H. Brown, Ph.D., Associate Professor

Samuel N. Dicken, Ph.D., Associate Professor

GEOLOGY

George A. Thiel, Ph.D., Associate Professor

GERMAN

Konstantin Reichardt, Ph.D., Professor

Lynwood G. Downs, Ph.D., Assistant Professor

Alan Holske, Ph.D., Assistant Professor

Hubert J. Meessen, Ph.D., Assistant Professor
 Frederick L. Pfeiffer, Ph.D., Assistant Professor

HISTORY

August C. Krey, Ph.D., Professor
 Alfred L. Burt, M.A., Professor
 George M. Stephenson, Ph.D., Professor
 Ernest S. Osgood, Ph.D., Associate Professor
 Alice F. Tyler, Ph.D., Assistant Professor
 John B. Wolf, Ph.D., Lecturer
 George W. Anderson, C.L., Instructor

HUMANITIES

Alburey Castell, Ph.D., Associate Professor

JOURNALISM

Ralph D. Casey, Ph.D., Professor
 Thomas F. Barnhart, B.A., M.A., Professor
 Ralph O. Nafziger, Ph.D., Professor
 J. Edward Gerald, B.J., M.A., Associate Professor
 Siegfried Mickelson, M.A., Assistant Professor

MATHEMATICS

Dunham Jackson, Ph.D., Professor
 Anthony L. Underhill, Ph.D., Associate Professor
 S. Elizabeth Carlson, Ph.D., Assistant Professor
 Gladys E. C. Gibbens, Ph.D., Assistant Professor
 John M. H. Olmsted, Ph.D., Assistant Professor
 Carey M. Jensen, Ph.D., Lecturer
 Betty E. Alexander, B.A., Instructor
 Helen J. Bozicevich, M.S., Instructor
 Henry D. Colson, B.A., Instructor
 Lillian R. Elveback, B.A., Instructor
 Nicholas A. Fattu, Ph.D., Instructor
 Louis Garfin, Ph.D., Instructor
 Bernard W. Lindgren, B.A., Instructor
 William D. Munro, M.A., Instructor
 Monroe D. Donsker, Teaching Assistant
 Walter P. Fleming, B.A., Teaching Assistant
 William H. Gilbert, B.A., Teaching Assistant

MUSIC

Paul M. Oberg, Ph.D., Professor
 Donald N. Ferguson, M.A., Professor
 Earle G. Killeen, M.Mus., Professor
 William Lindsay, Professor
 Gertrude R. Hull, Associate Professor
 Arthur B. Jennings, Associate Professor and University Organist
 Blanche Kendall, Assistant Professor
 Agnes Rast Snyder, Assistant Professor
 Clyde W. Stephens, Assistant Professor
 J. Rudolph Peterson, Instructor

PHILOSOPHY

George P. Conger, Ph.D., Professor
Herbert Feigl, Ph.D., Professor
Alburey Castell, Ph.D., Associate Professor
Mary J. Shaw, Ph.D., Assistant Professor

PHYSICS

J. William Buchta, Ph.D., Professor
Joseph Valasek, Ph.D., Professor
Robert R. Haun, Ph.D., Lecturer
Merrill Rassweiler, Ph.D., Lecturer
Clifford N. Wall, Ph.D., Lecturer

POLITICAL SCIENCE

Clarence C. Ludwig, M.A., C.P.A., Professor
Lloyd M. Short, Ph.D., Professor
Harold S. Quigley, Ph.D., Professor
Evron M. Kirkpatrick, Ph.D., Associate Professor
Lennox A. Mills, Ph.D., Associate Professor
Carroll J. Hawkins, M.A., Instructor
Herbert McClosky, B.A., Instructor

PSYCHOLOGY

Charles Bird, Ph.D., Professor
William T. Heron, Ph.D., Professor
Donald G. Paterson, M.A., Professor
Miles A. Tinker, Ph.D., Professor
Howard P. Longstaff, Ph.D., Associate Professor
Sam E. Baden, B.A., Instructor
Howard F. Hunt, Ph.D., Instructor
Kenneth MacCorquodale, M.A., Instructor

ROMANCE LANGUAGES

Francis B. Barton, Docteur de l'Université de Paris, Professor
Edward H. Sirich, Ph.D., Professor
Raymond L. Grismer, Ph.D., Associate Professor
Walter T. Pattison, Ph.D., Associate Professor
Herbert E. Clefton, Ph.D., Assistant Professor
James A. Cúneo, Ph.D., Assistant Professor
Jacques A. Fermaud, Ph.D., Assistant Professor
Marguerite Guinotte, M.A., Assistant Professor

RUSSIAN

Konstantin Reichardt, Ph.D., Professor

SOCIAL SCIENCE

Evron M. Kirkpatrick, Ph.D., Associate Professor
Elio D. Monachesi, Ph.D., Associate Professor
C. Edward Lindblom, B.A., Instructor

SOCIAL WORK

Anne F. Fenlason, M.A., Associate Professor
 Alice W. Clendening, M.A., Assistant Professor
 Monica K. Doyle, M.A., Assistant Professor
 Rose Green, M.S.S., Assistant Professor
 Joanna Poor, B.A., Instructor

SOCIOLOGY

Clifford Kirkpatrick, Ph.D., Professor
 George B. Vold, Ph.D., Professor
 Elio D. Monachesi, Ph.D., Associate Professor
 Raymond F. Sletto, Ph.D., Associate Professor
 F. Joseph Schneider, Ph.D., Instructor
 Dorris J. West, B.A., Teaching Assistant

SPEECH

Bryng Bryngelson, Ph.D., Professor
 Frank M. Karig, M.A., Professor
 Howard Gilkinson, Ph.D., Assistant Professor
 Frank M. Whiting, Ph.D., Assistant Professor
 Delwin B. Dusenbury, M.A., Instructor
 E. William Ziebarth, Ph.M., Instructor
 Sarah Brody, B.A., Clinical Assistant

ZOOLOGY

Adolph R. Ringoen, Ph.D., Professor
 Jerry E. Wodsedalek, Ph.D., Professor
 William G. Clark, Ph.D., Assistant Professor
 Ashton C. Cuckler, Ph.D., Instructor

INSTITUTE OF TECHNOLOGY

Samuel C. Lind, Ph.D., D.Sc., Dean
 Ora M. Leland, B.S., C.E., Dean of Administration

COLLEGE OF ENGINEERING AND ARCHITECTURE

Edward S. Loye, M.S., Administrative Assistant

AERONAUTICAL ENGINEERING

John D. Akerman, B.S.(Aero.E.), Professor
 Jean F. Piccard, D.Sc., Professor
 Charles T. Boehnlein, B.S., M.E., Associate Professor
 Garvin L. Von Fischen, M.S.(Aero.E.), Assistant Professor
 Norbert F. Ruszsj, M.S.(Aero.E.), Instructor
 George M. Baggs, B.S.(Aero.E.), Instructor

SCHOOL OF ARCHITECTURE

Roy C. Jones, M.S.(Arch.), Professor
 Leon E. Arnal, Architecte Diplôme par le Gouvernement Français, Professor
 S. Chatwood Burton, M.A., Professor
 Robert T. Jones, B.S., Professor
 Robert G. Cerny, M.Arch., Assistant Professor
 Donald C. Heath, M.S.(Arch.), Assistant Professor

CIVIL ENGINEERING

Alvin S. Cutler, C.E., Professor
Joseph A. Wise, B.S.(C.E.), Associate Professor
Otto S. Zelner, B.S.(C.E.), Associate Professor
Leonard F. Boon, C.E., Assistant Professor
George J. Schroepfer, M.S.(C.E.), C.E., Lecturer
Russell M. Cornell, M.S., Instructor
Walter T. Graves, B.C.E., Instructor
Milan A. Johnston, B.C.E., Instructor

DRAWING AND DESCRIPTIVE GEOMETRY

Robert W. French, B.S.(C.E.), Professor
Henry C. T. Eggers, E.E., Ph.D., Associate Professor
Howard D. Myers, B.S.(C.E.), Associate Professor
Robert F. Schuck, B.S.(E.E.), Associate Professor
Ivan Doseff, B.S., Assistant Professor
Orrin W. Potter, E.M., M.S.(Met.), Assistant Professor
William S. Williams, B.S.(E.E.), Assistant Professor
Paul W. Bullen, B.S.(C.E.), Instructor
Lewis G. Palmer, B.S., Instructor
Lloyd J. Quaid, B.S.(E.E.), Instructor
Richard D. Springer, B.C.E., Instructor

ELECTRICAL ENGINEERING

James S. Webb, Ph.D., Associate Professor
Loyst C. Caverley, M.S.(E.E.), Assistant Professor
O. William Muckenhirn, M.S.(E.E.), Assistant Professor
Russell L. Nielsen, M.S.(E.E.), Instructor
Robert M. Saunders, M.S.(E.E.), Instructor

MATHEMATICS AND MECHANICS

George C. Priester, Ph.D., Professor
Hugh B. Wilcox, M.S.(E.E.), Professor
Carl A. Herrick, M.E., Associate Professor
Harry A. Doeringsfeld, C.E., Assistant Professor
Fulton Koehler, Ph.D., Assistant Professor
William R. McEwen, M.A., Assistant Professor
Forrest E. Miller, M.S., Assistant Professor
Hugh L. Turrittin, Ph.D., Assistant Professor
Warren W. DeLapp, M.S.(Hyd.Eng.), Instructor
Raymond T. Lesch, B.M.E., Instructor
Roy B. Saunders, M.A., Instructor
Sigward A. Stavnes, M.S., Instructor

MECHANICAL ENGINEERING

Frank B. Rowley, B.S.(M.E.), M.E., Professor
Burton J. Robertson, B.S., E.E., Professor
Charles F. Shoop, B.S., B.S.(M.E.), Professor
Clarence E. Lund, M.S.(M.E.), Associate Professor
Bert A. Crowder, B.S.(M.E.), Assistant Professor
Fulton Holtby, M.E., Assistant Professor
Thomas P. Hughes, M.S.(Met.), Assistant Professor

Everett Laitala, M.S.(M.E.), Assistant Professor
 Millard LaJoy, M.S.(M.E.), Assistant Professor
 William H. Richards, Assistant Professor
 Robert E. English, B.M.E., Instructor
 Robert H. Eustis, B.M.E., Instructor
 Otis M. Larsen, M.S.(M.E.), Instructor
 Adolph O. Lee, B.S.(M.E.), Instructor
 Myrl A. Lindeman, B.S.(M.E.), Instructor
 Thomas E. Murphy, M.S.(Aero.E.) Instructor

SCHOOL OF CHEMISTRY

Lloyd H. Reyerson, Ph.D., Administrative Assistant

INORGANIC CHEMISTRY

M. Cannon Sneed, Ph.D., Professor
 Lloyd H. Reyerson, Ph.D., Professor
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