

The Bulletin of the
UNIVERSITY OF MINNESOTA

1950 Summer Courses in
**BUSINESS AND
DISTRIBUTIVE EDUCATION**

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



Vol. LIII

No. 3

January 16, 1950

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GENERAL INFORMATION

The University of Minnesota is offering an outstanding summer program for present and prospective teachers in the field of business and distributive education.

A FEW HIGHLIGHTS

Five authorities in business and distributive education

Wide offering of courses in the field

Graduate study leading to the Master's and Doctor's degrees

Weekly luncheons, with outstanding speakers

Approximately 4,000 courses offered in entire Summer Session



The Bulletin of the
UNIVERSITY OF MINNESOTA

Announcing

A Special Interdepartmental Course

**Cultural Relations:
Instrument of Peace or War?**

Cooperating Departments

General Studies

Political Science

History

Anthropology

Psychology

Sociology

1950 Summer Session

First Term

June 12 to July 22

Vol. LIII

No. 5

February 10, 1950

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for in Section 1103, Act of October 3, 1917, authorized July 12, 1918.

What the Course Is

This interdepartmental course in cultural relations, a feature of the 1950 Summer Session, will investigate fundamental factors underlying international relations.

Emphasis will be placed upon the effect of differences in national cultures, especially in ideologies, as they relate to the maintenance of peace and the avoidance of war.

The course aims also to assist in the evaluation of present-day world organization by indicating its accomplishments, shortcomings, and prospects.

Approaching the Problem

It is apparent that the area of investigation cuts across many social science fields. For that reason the University of Minnesota has secured the services of some of the outstanding social scientists of the country to present the contributions of their particular disciplines toward the solution of these vital problems.

A further contribution will be made by representatives from official agencies: American, foreign, and international. They will relate their practical experiences in the field of international cultural relations.

Sponsorship

Because of the importance of this topic and its interdisciplinary emphasis, this course has been jointly planned and sponsored by the Summer Session, the Interdepartmental Committee on International Relations and Area Studies of the College of Science, Literature, and the Arts, and the Social Science Research Center of the Graduate School.

Participating Faculty

History—Professor Hans Kohn, College of the City of New York

Political Science—Professor Linden A. Mander, University of Washington

Sociology—Professor Louis Wirth, University of Chicago

Social Psychology—Professor Allen L. Edwards, University of Washington

Anthropology—Professor Robert F. Spencer, University of Minnesota

Coordinator of the course—Werner Levi, associate professor of political science, University of Minnesota

Details of Arrangements

Dates—June 12 to July 22

Days—Daily, Monday through Friday

Time—11:00 to 11:50 a.m.

Credits—Three

For—Juniors, Seniors, Graduate Students

Prerequisite—Six credits in the social sciences

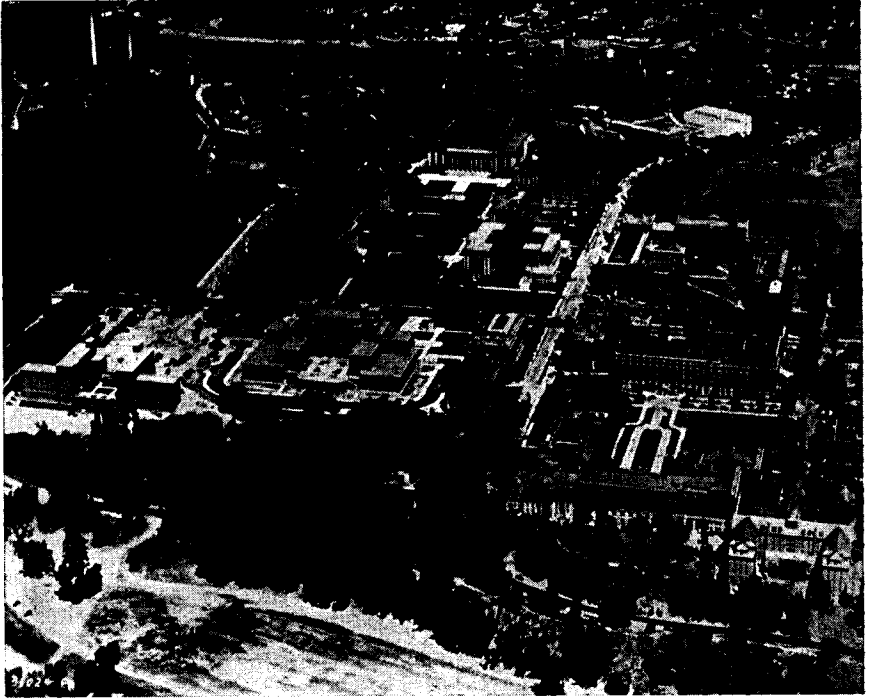
Credit Acceptance—All participating social science departments will recognize the course for credit in the student's major field.

Discussion—Provision is made for discussion during the course and during specially arranged informal meetings of faculty and students. The hour from 12:00 to 12:50 should be kept free if possible for voluntary discussion in this course. Other discussion periods will be arranged.

For Further Information

Address inquiries concerning "Cultural Relations: Instrument of Peace or War?" to

Dean of the Summer Session
537 Administration Building
University of Minnesota
Minneapolis 14



*University of Minnesota
Minneapolis Campus from the Air*

The Bulletin of the
UNIVERSITY of MINNESOTA

Biological Station Summer Session at Lake Itasca
Douglas Lodge, Minnesota

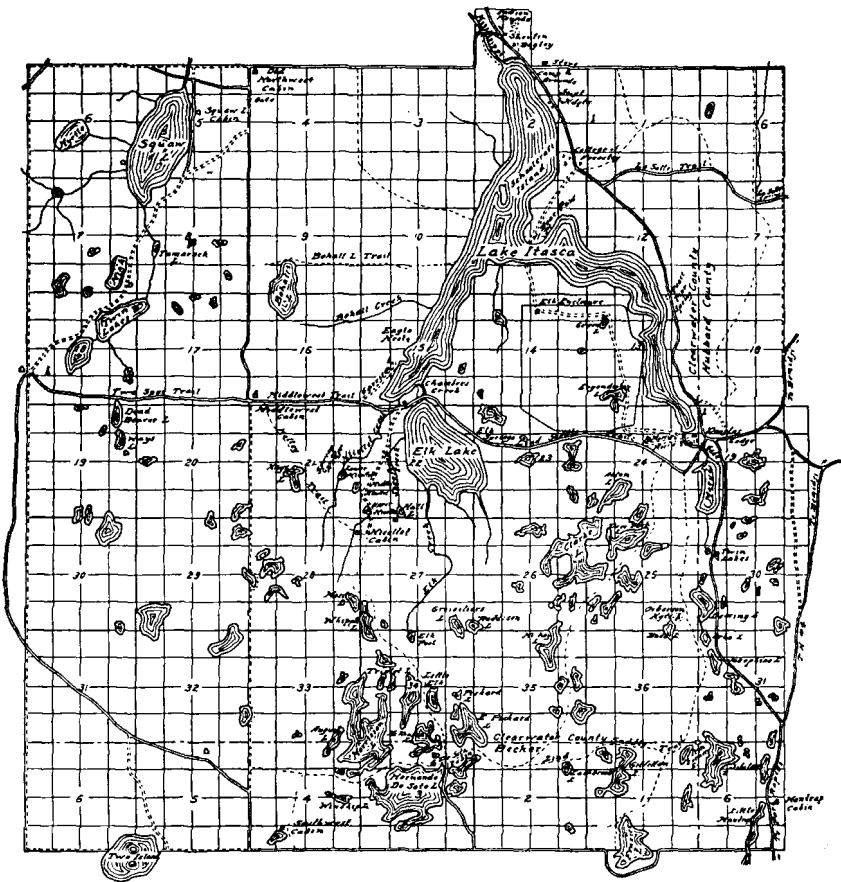
Second Term
July 24 to August 26



Volume LIII, Number 10

March 10, 1950

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Map of Itasca State Park

GENERAL INFORMATION

The Lake Itasca Forestry and Biological Station was established in 1908 to provide a summer camp for the instruction of forestry students. In 1935 these facilities were made available to interested students and teachers of biological subjects during the second term of the University's Summer Session. Since then there has been an increasing interest in this activity. Because of the rich and varied flora and fauna of the region, the Station provides a most suitable locality for the study of midwestern biological problems. Probably no other area in this region is better suited to the location of a field station of terrestrial and fresh-water biology.

Location and Opportunities for Biological Work

Coniferous and hardwood forests merging into prairies, sand dunes, preglacial lake beds, glaciated and unglaciated areas, thousands of fresh-water lakes of all sizes and types, and swamps from the heavily forested types to open grass and muskeg, all combine to give Minnesota a highly diversified flora and fauna. Most of these features except the unglaciated areas are within easy driving distance of the Station.

The Biological Station of the University of Minnesota is situated on the east shore of Lake Itasca in Itasca State Park, an area of great historical interest. The source of the Mississippi River is only a mile away. The normal points of entry to Itasca State Park by rail are Park Rapids and Bemidji, some twenty-five miles away. During the Summer Session, a Greyhound Bus Line from the Twin Cities reaches Douglas Lodge on the



Students Work on Individual Problems in Ecology

south end of Lake Itasca, four miles from the Biological Station. Itasca State Park, one of Minnesota's more primitive areas, is located about 225 miles northwest of the Twin Cities. It is seven miles square and covers an area of approximately 32,000 acres. The numerous lakes of all sizes have an area of about 5,000 acres. Lake Itasca, the largest in the park, is 1,460 feet above sea level. Only a short distance away is a continental divide with an elevation of 1,670 feet.

The wooded shores of the lakes, virgin forests, the dense swamps and open bogs, beaver dams, eagle nests, turkey vulture roosts, and prehis



Students Are Housed in Cabins of This Type Built on the Shore of Lake Itasca

toric Indian mounds are features of interest—some of which are accessible over well-marked trails. White, red, and jack pine, white and black spruce, balsam, larch, and white cedar are found in pure and mixed stands of all age classes. The hardwood forests are characterized by such trees as hard and soft maple, white and yellow birch, large- and small-toothed aspen, balm of Gilead, basswood, oaks, elms, and various other species. The variety of forest types and age classes brings about a corresponding variation in the subordinate vegetation. A state forest adjoining the park affords an excellent opportunity to study the ecology of the various floristic and faunistic successions characteristic of cut-over and burned-over lands. The Chippewa National Forest is only twenty miles to the east. This is one of the oldest and best-developed National Forests in the United States. About thirty miles to the west is the old Lake Agassiz basin with its famous Red River Valley wheat lands. Just north of Bemidji lies the Red Lake Indian Reservation. Upper and Lower Red



Field Collections Are Studied in the Limnology Laboratory

Lake together make one of the largest bodies of fresh water, excepting the Great Lakes, within the boundaries of the United States. The Chipewya Indians operate an extensive fishing industry and maintain a hatchery on Lower Red Lake. The coniferous and hardwood forests adjacent supply timber for the tribe's sawmill on a sustained yield basis. All these features are readily accessible from the Biological Station.

The wealth of flora and fauna makes possible the study of systematic botany, zoology, entomology, parasitology, and mycology through living specimens collected by the student. The abundance of fish, birds, and wild animals in their native habitat offers an unusual laboratory for studying ecology, entomology, parasitology, and wildlife management and conservation.

Instruction

The Biological Station was established for the advancement of fundamental knowledge of terrestrial and fresh-water biology. To this end it promotes and provides opportunity for instruction and research in the various fields of biology. Through these activities it hopes to add to the knowledge of the flora and fauna of the Lake States and midwestern regions of similar geological history.

This Station is conducted cooperatively by various departments of the College of Science, Literature, and the Arts and the College of Agri-



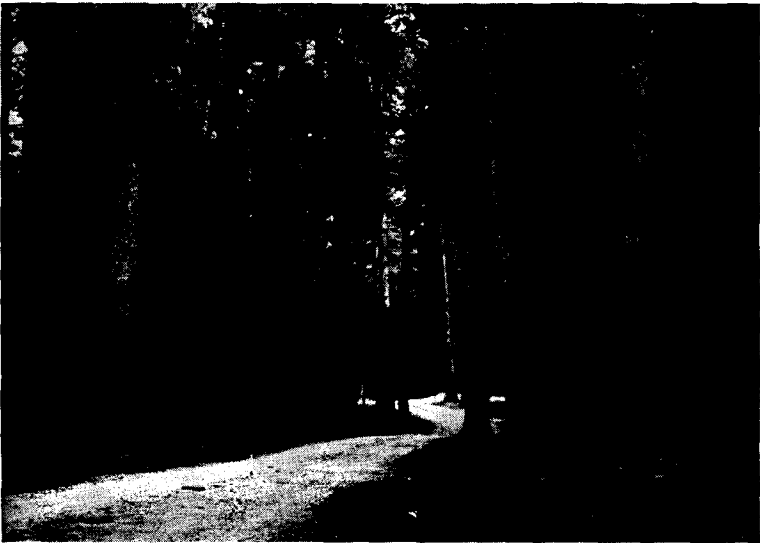
A Scene from the Shore of the Station

culture, Forestry, Home Economics, and Veterinary Medicine of the University of Minnesota through the sponsorship of the Summer Session.

It offers elementary and advanced courses in the fields of biology under competent instructors. Opportunities are offered also for independent study and research by more advanced students.

The Biological Station offers unusual educational opportunities to various groups of students.

1. To graduate students in the field of biology it offers an excellent field laboratory for research.



*Virgin Red Pine with an Understory of Balsam Fir
Note the deer browse-line on the balsam*



Students Reach Inaccessible Places by Light and Safe Boats

2. To students of wildlife management it offers an opportunity for life history and ecological studies.

3. To high school teachers it offers an opportunity for advanced study and improvement. It will provide the necessary training to enable the teacher to take biology classes to the field.

4. To undergraduate students in all fields of biology it offers an opportunity for advanced instruction. For those who are not certain in which field their major interest lies it can serve as a help in orienting them.

5. To students in agriculture and home economics who contemplate a career in extension work it offers an opportunity for training in conservation and nature study. These subjects are important phases of all rural extension work.

6. To teachers of botany, zoology, and all phases of biology in all schools and colleges it offers an opportunity for improvement through independent research.

Courses consist of field trips and indoor laboratory work. An effort is made to use the field rather than the laboratory as much as is consistent with good instruction. The scholastic standards of the University are maintained at the Station. University credit is given for work satisfactorily completed in the courses for which the student registers.

Facilities for Instruction and Research

The buildings and equipment of the Station, while not elaborate, are adequate for all purposes. Its dormitories and laboratories are located in an attractive forest setting on the shores of Lake Itasca. The new dining hall, located on the lakeshore, has a large assembly room with a fireplace which is used for evening meetings and recreation.

Two new one-story laboratory buildings were constructed in 1946. These buildings provide laboratory space for four subjects. They are well

lighted and provided with the necessary tables and chairs, a fine herbarium of the region, insect and fungus collections, bird skins, and small mammal skins for study.

The new limnology laboratory is a two-story structure located on the lakeshore completely equipped with all facilities. The entire camp is electrically lighted with 110-volt AC.

Since the major part of the instruction is in the field, the laboratory equipment is not elaborate. It is adequate, however, for all ordinary purposes, and arrangements can be made to have special equipment available if the needs can be anticipated. The normal equipment includes a library, all necessary compound and dissecting microscopes, binoculars, collecting equipment, various types of nets, rowboats, launches, and a supply of accessories and minor equipment essential for adequate instruction and research.

Arrangements can be made to provide laboratory space for advanced students and research workers. It is desirable to make such arrangements before coming to the Station.

Board and Lodging

Students live in small cabins, each one accommodating eight students. There are six cabins available for men students. A central bath house for men with showers and hot and cold water is conveniently



Ecology Students on a Field Trip

located to the cabins. Five cabins are available for women students. These cabins are equipped with running water and toilet facilities. They are so located that some of them can be assigned to men students if the enrolment of women students is not large enough to fill them. Students are asked to bring their own bed linen, two or three double wool blankets, a pillow, towels, and toilet articles. Nights are often cool, even during the summer. The following personal equipment is essential: suitable shoes or boots for field work, a field suit or dress, a warm jacket, a raincoat, heavy socks, a swimming suit, flashlight, desk lamp, notebooks, pocket field books, pencils, hand lenses, dissecting sets and pins, vials and corks, and the recommended and necessary textbooks. When possible, it is recommended that the



Students in Economic Zoology Study the Animal Inhabitants of the Station

student write the instructor to secure information on needed texts and equipment. The Station operates a supply store where standard supplies can be secured. Students are asked not to bring trunks since it is difficult to get them to the Station and there is no room in cabins for storing them.

Meals are served in the new dining hall operated under the direction of the administration of the Station in consultation with officers elected by the attending students. The meals are carefully planned, well balanced, and well prepared by experienced cooks. Fresh meat, vegetables, and fruit are served daily.

It is difficult to indicate what the cost of board will be in these times of rising prices. The cost in recent years has been approximately \$55 per student. A payment of \$55 to the treasurer of commissary

will be required during the first few days of the session. Should the cost exceed this figure, additional payments may be called for; if there is any balance left it will be refunded to the students.

A charge of \$5 will be made to each student for dormitory and dining hall facilities provided, payment to be made to the director during the first week of the session.

Laundry facilities are limited. Before the war, trucks from nearby towns called for and delivered laundry and dry cleaning. This service has not been resumed. Students are expected to keep their own quarters clean and orderly.

A two-ward, well-equipped infirmary, with a registered nurse in attendance, is available for the care of minor ills and injuries. Medical attention, when necessary, can be secured from Park Rapids or Bemidji. The payment of the incidental fee covers the cost of this service and entitles the student to medical service not to exceed a cost of ten dollars. Special services, such as X ray, infrared treatments, etc., and the cost of filling prescriptions must be paid by the student.

About one mile south of the Station the State Park maintains a large public camp ground. Students with families may avail themselves of the facilities here which include tenting or trailer space, water, fuel, ice, electricity, shower baths, and a well-developed beach. Some cabins are available here but it is not the policy of the Park Service to rent them for extended periods. There are numerous resorts in the vicinity providing excellent accommodations for families of graduate students and investigators. Arrangements can usually be made for reduced rates for extended stays. It is expected that as soon as building materials become readily available the Station will be able to provide adequate housing for this class of students.

While it is recognized that the main function of the Station is to provide an adequate educational program, yet the recreational program is not neglected. There is ample opportunity for swimming, fishing, and boating, also for hikes to points of historic interest and scenic beauty. The social events are handled by the students themselves with some guidance.

The camp operates with a minimum of rules and regulations. Cars are permitted but no garage space is provided. Weekend absences from camp and extended field trips must be reported. Off the campus the student is governed by the State Park regulations.

Fees and Expenses

The following fees are payable by each registrant on or before July 24:

Tuition fee	\$50.00
Incidental fee	7.00
General deposit fee	2.00
Laboratory fee	5.00
Total fees	\$64.00

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

The estimated cost of \$124 includes the \$64 registration fee, the \$55 for board, and \$5 dormitory and dining hall charge. It does not include traveling expenses, laundry, and incidental personal expenses.

Tuition and fees are payable at the time of registration on or before July 24. After July 24 the late registration fee will be charged as follows:

Tuesday, July 25	\$2.00
Wednesday, July 26	3.00
Thursday, July 27	4.00
Friday, July 28	5.00

No registration will be accepted after July 28 without approval of the professor in charge and the payment of the \$5 late registration fee.

The courses will begin Monday morning, July 24 and close Saturday, August 26.

Admission and Registration

The courses at the Biological Station are open to all qualified graduate and undergraduate students who have had the usual preliminary courses in biological subjects. Certain courses are especially designed for the teachers of biological subjects in colleges, high schools, and private schools, and others interested in plant and animal life.

Reservation may be made any time during the year. All reservations and inquiries should be addressed to the College Office, University Farm, St. Paul 1, Minnesota, and not to the Office of Admissions and Records or individual departments. **The reservation form is not a registration form.** Its purpose is to provide a check on the number of students expected so that the capacity of the Station will not be exceeded. Registration for students in residence at the University should be completed at the Office of Admissions and Records during June and July. Students not in residence at the University can complete their registration at the Station on Monday, July 24. G.I. and Rehabilitation students expecting to register under the G.I. Bill (P. L. 346 or P. L. 16) must have the necessary authorization at the time of registration.

Applications for admission for graduate students will be handled through the College Office. This office will forward the application to the dean of the Graduate School for approval. The applicant will then be informed of the status of his eligibility for admission to both the Graduate School and the Biological Station.

Professors have been appointed as consultants in the various fields to answer specific inquiries regarding courses as follows:

Zoology	Samuel Eddy	Department of Zoology, University of Minnesota, Minneapolis 14.
Entomology and Economic Zoology.....	William H. Marshall	Division of Entomology and Economic Zoology, University Farm, St. Paul 1.
Plant Pathology	Clyde Christensen	Division of Plant Pathology and Botany, University Farm, St. Paul 1.
Botany	A. Orville Dahl	Department of Botany, University of Minnesota, Minneapolis 14.

Most of the courses are offered on a four-credit basis per session. Each four-credit course will occupy two days a week from 8:00 a.m. to 5:00 p.m. An adequate noon hour is provided.

Two subjects are considered the normal load. Special permission must be secured from the director for a lighter or heavier load. Advanced students may take two subjects and in addition one or two credits of a well-delimited research problem.



Grass Pink
(*Calopogon pulchellus*)



One of the Hundreds of Fleshy Fungi
Available for Study
(*Amanitopsis vaginata*)



Wintergreen
(*Gaultheria procumbens*)

For the 1950 session, not more than eighty-eight students can be accommodated in residence at the Station. Priority of reservation will govern admission. The number of students living off-campus who can be accommodated is limited only by the facilities available at resorts or camps.

Mail for students registered at this session should be addressed in care of the Biological Station, Douglas Lodge, Minnesota. Attention is called to the fact that the name of the post office is "Douglas Lodge."

Graduate students are permitted to pursue their research problem work under the supervision and guidance of the staff without attending regular classes. Arrangements can be made so that the facilities of the Station are available to this type of student for the entire field season. Such arrangements must be worked out with the director and the instructor involved and each case will be judged separately.

Special arrangements may be made with the director of the Station by qualified independent guest investigators for the use of the facilities of the Station for research in various fields of terrestrial and fresh-water biology.

Graduate students should note that courses numbered below 100 carry only undergraduate credit.

Schedule of Courses

The courses offered at the Station will be given according to the following schedule. It is possible that circumstances may necessitate minor changes.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Bot. 131	Bot. 116	Bot. 112	Bot. 131	Bot. 116	Bot. 112
Bot. 170	Bot. 176	Ent. 124	Bot. 170	Bot. 176	Ent. 124
Ent. 162	Ent. 59	Zool. 55	Ent. 162	Ent. 59	Zool. 55
Pl. Path. 56	Ent. 68	Zool. 115	Pl. Path. 56	Ent. 68	Zool. 115
Pl. Path. 156	Zool. 143		Pl. Path. 156	Zool. 143	
Zool. 119			Zool. 119		

The schedule for other courses and research problems will be arranged to suit individual needs.

COURSES OF INSTRUCTION

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

Second Term of Summer Session

The courses to be given at the Biological Station will begin July 24 and close August 26. Special arrangements will be made for those whose school or other duties make it impossible to remain through the final week of the session.

BOTANY

- Pl.Path.56. Introduction to the Study of Fungi.** See Pl.Path. 56.
- 112.‡ Aquatic Flowering Plants.** A study of the higher plants of aquatic and marsh habitats. Identification and collection; association of species; relations to the habitat; adaptive morphology and food value to wildlife. (4 cred.; prereq. bot. or zool. 10 cred., or consent of instructors; WS.) Fassett
- 116. Summer Flora of Minnesota.** A survey of the summer flowering plants and ferns of the state with particular reference to the local flora. Collection and identification of species; distribution in Minnesota; literature and taxonomic methods. Text: *Gray's New Manual of Botany*. (4 cred.; prereq. Bot. 8, or consent of instructor; TF.) Fassett
- 131. Field Ecology.** The study of the plant communities represented in Itasca Park and vicinity and their dynamic relationships. Also the relationships of the local communities to the vegetation of Minnesota as a whole. Use of modern methods of vegetational analysis and measurement of environmental factors. (4 cred.; prereq. Bot. 50 or 130 or For. 2-3-4; MTh.) Buell
- Pl.Path.156. Advanced Study of Fungi.** See Pl.Path. 156.
- 170. Bryophytes and Pteridophytes.** Field and laboratory study of the mosses, liverworts, ferns, and fern allies of Minnesota. Texts: Conard, *How To Know the Mosses*; Tryon, et al, *The Ferns and Fern Allies of Wisconsin* (obtainable from the Department of Botany, University of Wisconsin). (4 cred.; prereq. 10 cred. of biology, or consent of instructor; MTh.) Evans
- 176. Fresh-water Algae.** The taxonomy and limnological relations of the fresh-water algae of Minnesota. Text: Smith, *Fresh-water Algae of the United States*. (4 cred.; prereq. 10 cred. of biology, or consent of instructor; TF.) Evans
- 196.*‡ Problems in Ecology, Taxonomy, Bryology, or Algology.** Advanced studies based on individual field work and research. (Cred. ar.; adv. students with proper qualifications.) Buell, Evans, Fassett
- 224.* Research Problems in Ecology.** (Cred. ar.; grad. students with proper qualifications.) Buell

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

ENTOMOLOGY AND ECONOMIC ZOOLOGY

59. **Field Entomology.** A study of the insect fauna in various natural habitats of the park and surrounding areas. The course includes field trips, collection and classification of insects, as well as studies of general morphology, life histories, and habits of local species under ecological conditions governing the distribution of insect fauna of the region. Text: Lutz, *Field Book of Insects*. (4 cred.; jr., sr.; prereq. Zool. 1-2-3 or equiv.; TF.) Spieth
68. **Natural History of the Higher Vertebrates.** Life histories, habits, economic importance, and identification of amphibians, reptiles, birds, and mammals, with special reference to the local species. Texts: Peterson, *A Field Guide to the Birds*; Burt, *Mammals of Michigan*; Breckenridge, *Reptiles and Amphibians of Minnesota*. Dissecting set and King's notebook required. Field glasses suggested. (4 cred.; prereq. Zool. 1-2-3 or equiv.; TF.) (There will be a "cost basis charge" for mileage on field trips.) Marshall
124. **The Biology of Immature Insects.** A field and laboratory course treating of habits, habitat, life history, and identification of immature insects with particular emphasis on aquatic forms. Text: H. F. Chu, *How To Know the Immature Insects*. (4 cred.; prereq. 15 cred. in zool. and Ent. 52 or equiv. or consent of the Division of Entomology and Economic Zoology; WS.) Spieth
162. **Ecology of Terrestrial Vertebrates.** Field work demonstrating methods of studying vertebrate populations and their relationship to local environments. Texts: same as Course 68 and Hesse, Allee, and Schmidt, *Ecological Animal Geography*. Field projects, analyses, and lectures. (4 cred.; prereq. Ent. 68 or Zool. 57-58 and Ent. 63 or equiv. and Bot. 20; MTh.) (There will be a "cost basis charge" for mileage on field trips.) Marshall
- 196.* **Special Problems in Entomology and Economic Zoology.** Advanced work in entomology and economic zoology and ample opportunity for individual research, especially in various phases of faunistic studies in terrestrial, aquatic, and forest entomology and economic zoology. (Cred. ar.; adv. students with proper qualifications.) Marshall, Spieth

PLANT PATHOLOGY AND BOTANY

56. **Introduction to the Study of Fungi.** The structure, development, and identification of fungi, especially those of economic importance. (4 cred.; jr., sr.; prereq. bot. 9 cred. or consent of instructor; MTh.) C. M. Christensen
156. **Advanced Study of Fungi.** General characters of fungi; especially those used in identification; cultural and taxonomic procedures and practices. (4 cred.; MTh.) C. M. Christensen
- 210.* **Special Problems in Mycology.** Research work along the following suggested lines: taxonomy of natural groups, fungus flora of particular regions, localities, or habitats; morphology or physiology of special forms. (Cred. ar.; grad.; prereq. 105-106-107.) C. M. Christensen

ZOOLOGY

- 55.‡ Natural History of Invertebrates and Fishes.** A taxonomic and ecological survey of the local fauna, including life histories and habitats. Text: Eddy and Hodson, *Taxonomic Keys of the Common Animals of Minnesota*. (4 cred.; prereq. Zool. 1-2-3 or equiv.; WS.) Eddy
- 107.‡ Protozoology.** *Not offered in 1950.*
- 115.‡ Advanced Natural History of Invertebrates and Fishes.** An advanced taxonomic and ecological survey of the local fauna including a detailed and independent ecological study of several taxonomic groups. Text: Eddy and Hodson, *Taxonomic Keys of the Common Animals of Minnesota*; Ward and Whipple, *Fresh-water Biology*. (4 cred.; prereq. 15 cred. in zool.; WS.) Eddy
- 119.‡ Limnology.** A study of the conditions for life in the water and distribution of aquatic animals. Text: Welch, *Limnology*. (4 cred.; prereq. 15 cred. in zool.; MTh.) Eddy
- 143.‡ Animal Parasites.** Parasites of local fauna with special reference to helminths. (4 cred.; prereq. 15 cred. in zool. or consent of instructor; TF.) Chandler
- 198.* Problems in Parasitology, Ecology, and Limnology.** Principles and further work in special lines adapted to needs of individual students. (Cred. ar.; prereq. Zool. 1-2-3 and special requirements; adv. students.) Eddy, Chandler

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



Collecting Specimens for Laboratory Work

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The 58th Summer Session
Announcement of Courses
1950

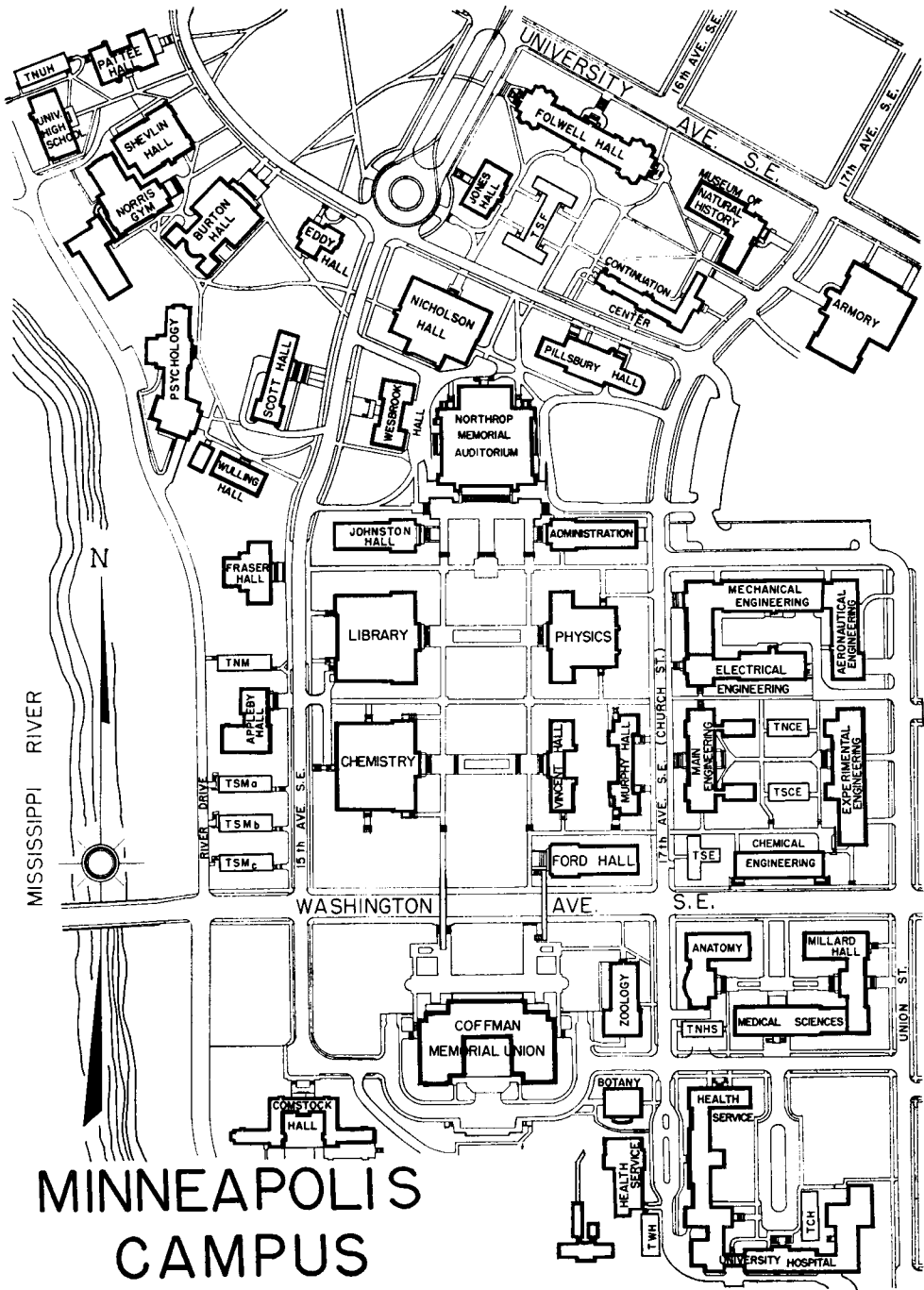
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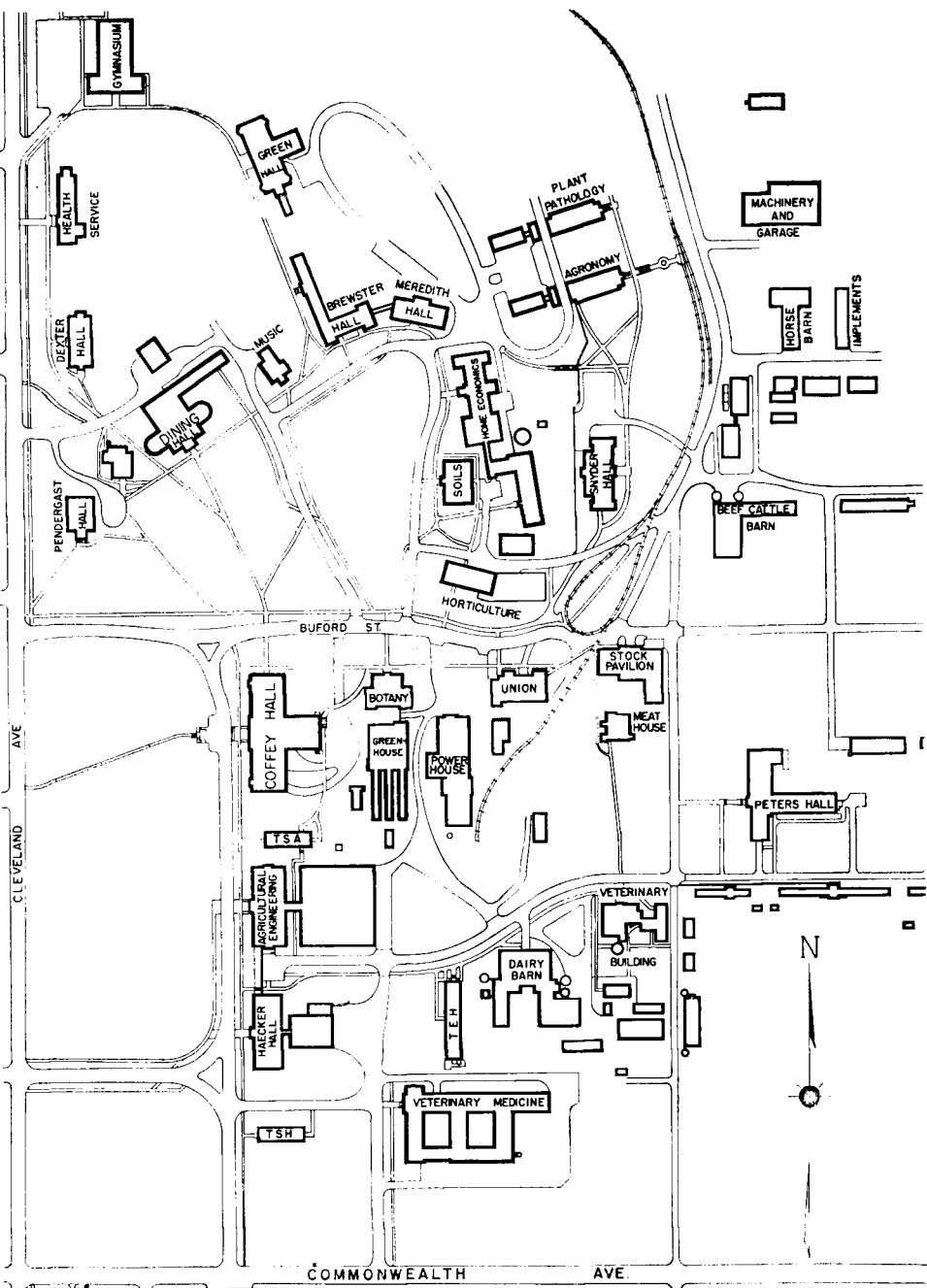
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MINNEAPOLIS CAMPUS



ST. PAUL CAMPUS

UNIVERSITY OF MINNESOTA

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CALENDAR OF THE 58TH SUMMER SESSION, 1950

(Except Library Instruction)

June	12	Monday	Registration, first term
June	13	Tuesday	Registration, first term
June	14	Wednesday	First term classes begin
July	4	Tuesday	Independence Day; holiday
July	20	Thursday	Commencement, 8:00 p.m.
July	22	Saturday	First term closes
July	24	Monday	Registration for second term
July	25	Tuesday	Second term classes begin
August	24	Thursday	Commencement, 8:00 p.m.
August	26	Saturday	Second term closes

LIBRARY INSTRUCTION

(Eight-week course)

June	12	Monday	Registration
June	13	Tuesday	Registration
June	14	Wednesday	Term begins
July	4	Tuesday	Independence Day; holiday
August	5	Saturday	Term closes

CLASS HOUR SCHEDULE

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

Convocation, 8 p.m., Wednesday

(See Official Daily Bulletin for announcements)

No application form need be filed by students with previous college work who plan to attend during the 1950 Summer Session only. See pages 9 and 10 for further details.

BUILDINGS*

A, Armory
 Adm, Administration
 AE, Aeronautical Engineering
 Ag(StP), Agronomy Bldg
 AgrBot(StP), Agricultural Botany
 AgSS(StP), Agronomy Seed Stocks
 AH, Appleby Hall
 BB(StP), Bull Barn
 BCB(StP), Beef Cattle Barn
 BeH(StP), Berry House
 BFH(StP), Botany Field House
 Bo, Botany
 BoG, Botany Greenhouse
 BrH(StP), Brewster Hall
 Bu, Burton Hall
 C, Chemistry Bldg
 CCS, Center for Continuation Study
 CH, Cooke Hall
 CI(StP), Crop Improvement
 CMU, Coffman Memorial Union
 CofH(StP), Coffey Hall (Administration)
 CoH, Ada Comstock Hall
 CS(StP), Carpenter Shop
 CSP(StP), Cold Storage Plant
 CSS(StP), Corn Seed Stock Bldg
 CWI, Child Welfare Institute
 DCB(StP), Dairy Cattle Barn
 DeH(StP), Dexter Hall
 DH(StP), Dining Hall
 DHD(StP), Dining Hall Dormitory
 E, Main Engineering
 EdH, Eddy Hall
 EE, Electrical Engineering
 En(StP), Engineering Bldg
 Ex, Experimental Engineering
 F, Folwell Hall
 FCFH(StP), Farm Crops Field House
 FdH, Field House
 GCH(StP), Golf Clubhouse
 GH(StP), Green Hall
 Gr, Greenhouse (13th and University av se)
 Gy(StP), Gymnasium
 HB(StP), Horse Barn
 HE(StP), Home Economics
 HH(StP), Haecker Hall
 HL, Hydraulic Laboratory (Hennepin Island)
 HoB(StP), Home Bldg
 Hospitals
 CI, Cancer Institute
 EH, Eustis Hospital
 EMH, Elliot Memorial Hospital
 HS, Health Service
 PW, Psychiatric Ward
 TM, Todd Memorial Hospital
 UD, University Dispensary
 HP, Heating Plant
 Hr(StP), Horticulture
 HS(StP), Health Service
 IA, Institute of Anatomy
 IP, Indoor Practice
 J, Jones Hall
 L, Law Bldg
 Lib, Library Bldg
 LsPav(StP), Livestock Pavilion
 MB(StP), Music Bldg
 ME, Mechanical Engineering
 MeH(StP), Meredith Hall
 MeS, Medical Sciences
 MEX, Mines Experiment Station
 MH, Millard Hall
 MNH, Museum of Natural History
 MS(StP), Machinery Shop
 MSh(StP), Meat Shop
 MurH, William J. Murphy Hall
 NGW, Norris Gymnasium for Women
 NH, Nicholson Hall
 NMA, Northrop Memorial Auditorium
 OD(StP), Old Dairy
 OSL, Oak Street Laboratories
 P, Pillsbury Hall
 Pe(StP), Pendergast Hall
 PG(StP), Poultry Group
 Ph, Physics
 PH(StP), Power House
 PiH, Pioneer Hall
 PoH, Louise M. Powell Hall for Nurses
 PP(StP), Plant Pathology
 Psy, Psychology
 Pt, Pattee Hall
 SaH, Sanford Hall
 SB(StP), Swine Barn
 SBH, State Board of Health
 ScH, Scott Hall
 ShB(StP), Sheep Barn
 ShH, Shevlin Hall
 SnH(StP), Snyder Hall
 So(StP), Soils
 SS, Storehouse and Shops
 SSN(StP), Seed Storage North
 SSS(StP), Seed Storage South
 Stad, Stadium
 Sto, Storage Bldg
 TCH, Temporary—Court Hospital
 TEH(StP), Temporary—East of Haecker
 TH(StP), Thatcher Hall
 TNCE, Temporary—North Court of Engineering
 TNHS, Temporary—North of Health Service
 TNM, Temporary—North of Mines
 TNUH, Temporary—North of University High School
 TSA(StP), Temporary—South of Administration (Coffey Hall)
 TSCE, Temporary—South Court of Engineering
 TSE, Temporary—South of Engineering
 TSF, Temporary—South of Folwell
 TSH(StP), Temporary—South of Haecker
 TSMa, Temporary—1st South of Mines
 TSMb, Temporary—2nd South of Mines
 TSMc, Temporary—3rd South of Mines
 TSP, Temporary—South of Powell
 TWH, Temporary—West of Hospitals
 UHS, University High School
 VB(StP), Veterinary Barn
 Ve(StP), Veterinary
 VH, Vincent Hall
 VM(StP), Veterinary Medicine
 WeH, Wesbrook Hall
 WeiH(StP), Weigley House
 WuH, Wulling Hall
 Z, Zoology Bldg

* Buildings located on the St. Paul Campus are followed by StP in parentheses.

1950 SUMMER SESSION

The Summer Session of 1950 will be the fifty-eighth at the University of Minnesota.

This session also opens the Centennial year of the founding of the University and special attention is being given both in the curriculum and the special activities programs to the history and development of this distinguished institution. Your special attention is directed to the extensive course offerings in American Studies, an expanded program in Geography, an Opera Workshop, a Children's Theater, an outstanding seminar in International and Intercultural Relations (Soc.Sci. 111), and the Language Residence Houses.

DULUTH BRANCH

Summer Session curricula for the Duluth Branch include preprofessional, teacher education, and four-year academic programs. Dates and tuition are the same as for the University of Minnesota in the Twin Cities. For bulletin and detailed information, write to the Office of Personnel Services, University of Minnesota, Duluth Branch, Duluth 5.

GENERAL INFORMATION

On its Minneapolis Campus, the University of Minnesota places at the disposal of the Summer Session student the facilities of twelve schools and colleges comprising this great educational institution—their faculties, libraries, and laboratories, observatory, and museums—and in addition a recreation program of concerts and lectures as well as physical recreation such as swimming, golf, tennis, bowling, and folk and ballroom dancing. The added cultural advantages of two large metropolitan centers offer attractions for the Summer Session student that are unique with the University of Minnesota.

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

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

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

Intercampus Car

For students who are registered for class work on both the Minneapolis Campus and the St. Paul Campus, free transportation on the intercampus car is provided. Tickets will be issued to students registered in the College of Agriculture, Forestry,

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

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

General Offices

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

University Library

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

In addition to the University Library and its branches, the Minneapolis Public Library, the St. Paul Public Library, the Minnesota Historical Society, and the James Jerome Hill Reference Library of St. Paul grant liberal privileges 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 Minneapolis Campus. The St. Paul Campus post office is in Coffey Hall on that campus. At the time of registration each student is assigned a post-office box in which he will receive all mail, announcements, and university communications. The mail box should be visited at least once a day. *When leaving at the close of a term, students should give the postmaster a forwarding address.*

Official Daily Bulletin

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

Students' Health Service

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

Housing and Food Service

Living Expenses—The living expenses for students at the University are never very high, and this is true especially of the Summer Session. Good private rooms may be had from \$20 to \$25 per month, less if the room is shared. In addition to the cafeterias conducted on the campus by the University, several good restaurants are to be found in the immediate vicinity of the University. Further information concerning room and board may be obtained by addressing the Director of Student Housing, 202 Eddy Hall, University of Minnesota, Minneapolis 14. It is generally more satisfactory to engage accommodations after arrival than to make reservations in advance, except in the case of reservations at Comstock Hall or Sanford Hall, dormitories for women, the Winchell Cottages for women (cooperative residences), and Pioneer Hall, dormitory for men, on the Minneapolis Campus; and Meredith Hall, dormitory for women on the St. Paul Campus.

ADMISSION AND REGISTRATION

Admission

The courses of the Summer Session are open to all qualified high school graduates, persons now regularly admitted to the University including those attending regular session, and persons with previous college work. Students with previous college work who wish to attend for the Summer Session only and who are not candidates for degrees during the Summer Session may do so without filing credentials, provided the applicants are in good standing. Such students will be classified as special students for the Summer Session only. Special students who wish to be considered for admission to a subsequent term must file regular admission applications early in the summer. Furthermore, no special student may be a candidate for a degree at the University until he has filed credentials and been regularly admitted.

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

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

The procedure for admission of graduate students is discussed on pages 18 and 19.

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

Nonresident Regulations for the Academic Year†

Admission

Admission of nonresident undergraduates to the regular academic years is restricted. The current *General Information Bulletin* should be consulted for full details by all students contemplating application to any regular term. Interested

† Not applicable to Summer Session.

nonresident students of superior academic ability may file applications and credentials. This, however, involves no commitment to admit them.

Readmission

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

Registration

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

The regular registration days are:

For the first term	Monday, June 12, 8:00 a.m. to 4:00 p.m.
	Tuesday, June 13, 8:00 a.m. to 4:00 p.m.
For the second term	Monday, July 24, 8:00 a.m. to 4:00 p.m.

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

Wednesday, June 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 fees to those who are unable to reach the University during the regular registration days.

At the beginning of the first term, candidates for admission to all colleges except the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine will register in Norris Gymnasium for Women on the Minneapolis Campus. Candidates for admission to the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine will register at 203d, Coffey Hall, St. Paul Campus.

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 TALLY PROCEDURE

June 12 and 13

Students registering in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine will report to 203d Coffey Hall, St. Paul Campus, for registration materials.

Other students will report to Norris Gymnasium for Women for materials. Students without previous college work who do not have an admission certificate should go to the admission table in Norris Gymnasium for Women.

Students registering before or after the regular registration period, June 12 and 13, and during the second term of the Summer Session will go to the Office of Admissions and Records to obtain registration materials.

As part of the registration procedure, all students, including graduate students, must tally for courses listed below. To tally, the student should obtain an I.B.M. class reservation card at the appropriate college tally office indicated. These class reservation cards must be attached to the student's registration blank when it is presented at the college window in the Office of Admissions and Records (a manual tally is maintained for some courses tallied at 136E and the registration blank will be stamped to indicate that these courses were tallied).

**AGRICULTURE, FORESTRY, HOME
ECONOMICS, AND VETERINARY
MEDICINE**

Tally at 203d CofH for all courses. Courses 200 and over are not tallied.

BUSINESS ADMINISTRATION

All courses tallied except Econ 32 and 39 BA, all courses tallied at 107VH*

Econ, courses tallied at 107VH* for BA students and 107TSF* for all other students.

EDUCATION

Tally at 204Bu* for courses listed below unless otherwise indicated. Other courses are not tallied.

AgEd 82, 91, 151, 161, 165, 165A tallied at 203d CofH

ArEd 17, 19, 81

EdCI 109, 112, 125, 129, 135, 167

EPsy 125, 216a, 217a, 282

EdT 52

HEd 180

HEEd 191, 192, 193B, 194A tallied at 203d CofH

Ind 3, 5, 7, 11, 16, 20, 21, 50A, 50B, 50C

MuEd 50A, 50B, 59, 60, 61, 62, 65, 67, 105E PE (for men) 1A, 1B, 2A, 2B tallied at 107TSF*

GENERAL COLLEGE

Tally at 108WeH* for all courses.

INSTITUTE OF TECHNOLOGY

The courses listed below are tallied at 136E unless otherwise indicated. Courses numbered 200 and over are not tallied.

AnCh 1, 2, 123

AnCh 7 tallied at 107TSF*

InCh 1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 13, 102, 103, 104, 105, 108, 109, 111

InCh 1, 2, 4, 5, 11 SLA students tallied at 107TSF*

OrCh 61, 62, 101, 102, 110, 130, 139, 143

OrCh 61, 62 SLA students tallied at 107TSF* PCh 104, 105, 106

PCh 107, 108 tallied at 107TSF*

All other departments (Aero, Arch, ChEn, CE, Draw, EE, Engl, MM, ME, Met, Min, PetE) All courses numbered below 200 are tallied.

SCIENCE, LITERATURE, AND THE ARTS

Courses listed below are tallied at 107TSF*, unless otherwise indicated. Other courses are not tallied.

Art 4, 5, 10, 20, 21, 30, 31, 32, 33, 34, 35, 43, 44, 45, 60, 61, 62, 63, 64, 65, 70, 71, 72, 73, 74, 75, 83, 84, 85, 90, 91, 92, 93, 94, 95, 143, 144, 145, 150, 151, 152, 153, 154, 155

Bot 4, 5

Comm 1, 2, 3

Comp 4, 5, 6, 27, 28, 101, 102

Engl 55, 56, 190

Fl. 1, 14, 15, 25

Hum 1, 2, 3, 4, 22, 23, 51, 52, 61, 62

Jour 10, 13, 14, 15, 51, 55, 68, 73, 86, 101, 140, 141

Math 1, 6, 7, 15, 16, 20, 30, 50, 51, 101, 103, 106, 109, 126, 131, 135, 136, 139, 141, 176, 179

Mus 1, 1T, 2T, 3T, 4T, 5T, 6T, 31, 32, 35, 36, 46, 73, 74, 75, 76, 86, 87, 88, 101

NSci 165, 175

Phys 110, 144

Phys 7, 9 tallied at 136E

PO 1

Soc 1, 2

Spch 1, 2-3, 32, 33, 34, 61, 65, 67, 81, 91, 103, 106, 111, 122, 126, 131, 132, 152, 163

SSci 1, 2, 3, 111

Zool 1, 2, 21, 51

* These courses will be tallied in Norris Gymnasium for Women on the regular registration days, June 12 and 13.

Changes in Registration

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

Fees

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

Tuition fee (per term)	\$37.50
Incidental fees†† (per term)	7.00
<hr/>	
Total fee (per term)	\$44.50
General deposit	\$ 2.00

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

Part-time tuition fee (4 credits or less) (per term)	\$27.00
Incidental fees†† (per term)	7.00
<hr/>	
Total fee (per term)	\$34.00
General deposit	\$ 2.00

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

In addition, certain courses require payment of a course fee. These courses are designated with a double dagger (‡) after the course number in the description of those courses. See Course Fees, pages 14-17.

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

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

For fees for students in the Medical School, see page 80.

For fees for students in the School of Dentistry, see page 96.

For fees for students in the Law School, see page 78.

For fees for students registered for nursing courses, see page 94.

For fees for students registered for veterinary medicine, see page 74.

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

†† An incidental fee of \$7 per term is charged each student for which the student receives the privileges of the Coffman Memorial Union, the Health Service, Library, Counseling Bureau, Speech Clinic, Recreation, *Minnesota Daily*, and the university post-office service.

Auditors

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

Credit

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

Amount of Work

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

Examinations

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

Grading System

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

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

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

Regulations Governing Granting of Degrees

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

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

2. **Recommendation by the faculty.**

3. **Residence requirement**—The student must earn at least one year's credit in residence in this University. If the term of residence is only one year, that year must be the senior year. In any case, the student must spend two quarters of the senior year in residence. This last requirement may be waived under such rules

as may be established by each college for such exemptions. In addition, special residence requirements must be met in several of the schools and colleges. Extension courses (not correspondence study courses) completed in Minneapolis, St. Paul, or Duluth may apply toward the residence requirement. Work done on a campus of the University of Minnesota in Armed Forces College Training Programs is considered residence credit.

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

5. **Attendance at commencement**—A candidate for a degree is required to be present at the commencement exercises at which his degree is conferred. Commencement exercises for Summer Session candidates in the first term will be held Thursday, July 20, and for second term Summer Session candidates, will be held Thursday, August 24.

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

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

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

Institute of Technology	\$11.00
College of Education (except Nursing Education)	4.50

EXPLANATION OF SCHEDULING CODE

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

Following each course is a statement, in parentheses, of credits, classes of students eligible, prerequisites, class hours, days of the week, and location of the class. Thus: (3 cred., jr., sr., grad.; prereq. 12, 13; II MTWThF; 117F) means that course carries three credits, is open to juniors, seniors, and graduate students, has for prerequisites Courses 12 and 13 in the department under which the course is listed, meets at the second hour on Monday, Tuesday, Wednesday, Thursday, and Friday in Room 117, Folwell Hall. Abbreviations for class hours and buildings are interpreted by the lists on pages 5 and 6.

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

COURSE FEES

Courses designated with a double dagger (‡) after the course number in the description of these courses require the payment of a course fee as indicated below.

Aeronautical Engineering Laboratory fee, required of all sophomores, juniors, and seniors in aeronautical engineering	\$ 1.50 per term
Agricultural Education 82, 91	1.50 per credit
Agricultural Engineering 40	1.00 per term
41	6.00 per term
42	3.00 per term
Anatomy 100, 101	7.50 per term
156	1.00 per credit
Architecture	
AD I-II-III	3.00 per term
AD IV	10.00 per term

Art 1, 4, 5, 20, 21, 30, 31, 32, 33, 34, 35, 60, 61, 62, 63, 64, 65, 70, 71, 72, 73, 74, 75, 90, 91, 92, 150, 151, 152, 153, 154, 155, 200, 201, 202	\$ 1.00 per term
44, 45, 83, 84, 85, 93, 94, 95, 183, 184, 185, 193, 194, 195	2.00 per term
10, 143, 144, 145	5.00 per term
Art Education 84, 184	1.50 per credit
Astronomy 20	1.00 per term
Bacteriology 53, 102, 104, 116	3.00 per term
Biological Station, Laboratory fee	5.00 per term
Biostatistics (see Public Health)	
Botany 112, 194, 195, 196, 197, 198	1.50 per term
4, 5	2.25 per term
Business Administration 112, 130, 139, 150	2.00 per term
Civil Engineering 23	10.00 per term
52, 53	2.00 per term
Communications 1	1.00 per term
Economics 32, 37A, 39 (for one or more of these courses)	2.50 per term
Ed.C.I., Curriculum and Instruction. All courses	1.50 per credit
Ed.Psy. 143, 150	1.50 per credit
216A, 217A	1.50 per term
217	1.00 per term
Ed.T., Methods and Directed Teaching. All courses	1.50 per credit
Electrical Engineering 114, 116, 118, 120, 128, 129	1.00 per term
124, 126, 165, 166	2.00 per term
Entomology 5	1.50 per term
Family Life 14	3.00 per term
General College 10A	1.00 per term
23A, 32A	1.50 per term
Geology 100, 115, 150	10.00 per term
Humanities 1, 51, 61	1.00 per term
Industrial Education 3, 5, 7, 11, 16, 20, 21, 50A-B-C	1.50 per credit
Journalism, general fee	1.00 per term
The general fee of \$1 per term, regardless of the number of courses taken, is charged students registered for courses in Journalism.	
<i>The following courses have fees in addition to the \$1 general fee:</i>	
51, 68 (in addition to general fee)	2.00 per term
55 (in addition to general fee)	3.00 per term
Mathematics and Mechanics 87, 141, 143	1.00 per term
Mechanical Engineering 4, 5, 6, 7, 8, 12, 13, 14, 15, 16, 17, 110, 111, 112, 113, 114, 149, 159, 169, 189, 198	2.00 per term
Methods and Directed Teaching. All courses	1.50 per credit
Modern Language Institute	40.00 per term
Music 11 to 27, 2 credits	30.00 per term
11 to 27, 4 credits	60.00 per term
60B, 61B, 62B	25.00 per term
13B	50.00 per term
31, 35, 36	1.50 per term
144, 145	2.00 per term
Students paying \$30 or more in music fees may take other courses for additional tuition of \$27, incidental fee \$7 and special course fees.	
Music Education 50A-B, 59, 60, 61, 62, 63, 64, 65	1.50 per credit
225E, 2 credits	30.00 per term
225E, 4 credits	60.00 per term

Physical Education (men) 1A-B, 2A-B	\$ 1.00 per credit
4A-B-C, 5A-B, 6A-B-C, 7A-B-C, 8, 9A-B, 55, 60A, 73, 74, 75	1.50 per credit
A towel and locker fee of \$2.50 per term, payable at the department, is charged all students using physical education facilities for activity. Uniforms for class work or recreational activity are \$2 per term.	
Physical Education (women) 4, 5, 7, 8, 11, 12, 13, 18, 32, 33, 37	2.50 per term
Maximum course fee of \$5.00 per term on the above courses regardless of the number of courses taken.	
64, 65, 90	1.50 per credit
Physics 1a, 2a, 110, 144	2.00 per term
5 (Part I), 5 (Part II), 7 (Part I), 7 (Part II), 9 (Part I), 9 (Part II)	1.00 per term
Psychology 4-5, 135, 136, 137	1.00 per term
Public Health 65, 66, 67	1.00 per credit
140	1.00 per term
111	2.00 per term
Rhetoric 22	1.00 per term
Social Work 213, 214	3.50 per term
Speech 1, 2-3, 61, 67, 81	1.00 per term
32, 33, 34, 71, 91, 111, 131, 132	2.00 per term
Zoology 1, 2	2.25 per term
21, 51, 55, 107, 115, 116, 119, 143	1.50 per term

COURSES REQUIRING DEPOSIT CARDS

Nonveterans should purchase Agricultural Biochemistry, Chemistry, or Physiological Chemistry deposit cards as appropriate. Chemistry and Physiological Chemistry cards may be purchased from the bursar, Administration Building, Minneapolis Campus. Agricultural Biochemistry cards may be purchased from the cashier, Coffey Hall, St. Paul Campus. Chemistry deposit cards are \$10 each. Other deposit cards are \$5 each. Veterans will receive information from the instructor concerning cards and checking into laboratory. No student will be assigned a desk in the laboratory until he presents his card. The course fee, laboratory material, and breakage will be charged against the card. The unused balance will be credited to the student's matriculation deposit at the end of the course.

Agricultural Biochemistry 118	\$ 5.00 per term
Analytical Chemistry 1, 2, 7, 123	3.00 per term
Chemical Engineering 151, 152, 156	3.00 per term
Inorganic Chemistry 1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 13, 102, 109	3.00 per term
Organic Chemistry 61, 62, 102, 130	3.00 per term
110, 139	10.00 per term
Physical Chemistry 104, 105, 106, 107, 108	3.00 per term
Physiological Chemistry 100, 101	3.00 per term

SPECIAL FEES

Advanced Standing examination fee	\$5.00
Such an examination may be taken only upon approval of the appropriate committee. (No fee for such examination on first entering the University, if taken within the first six weeks)	
Credential fee—required of nonresidents applying for admission to Law, Medicine, Dentistry, Education (Senior College), and Business Administration	5.00
Duplicate diploma fee (if original has been lost or destroyed)	
Large duplicate diploma fee	7.50
Small duplicate diploma fee	5.00

Graduation fee (including small diploma)	
Graduate School	\$10.00
Other schools and colleges	7.50
Large diploma fee—Any graduate may receive a large diploma on payment, in addition to the graduation fee, of a special fee	5.00
Microscope rental fee—	
For partial use of microscope	3.00 per term
For continuous possession and use	6.00 per term
Music Practice fees:	
Piano and practice room 1 hour per week	1.00 per term
2 hours per week	2.00 per term
Each additional hour per week50 per term
Small organ and practice room20 per hour
Large organ and practice room40 per hour
Practice room for other instruments, 10 hours per week	2.00 per term
Placement service fee—required of candidates for degrees from:	
Institute of Technology	11.00
College of Education (except Nursing Education majors)	4.50
Record service fee—50 cents, deducted from each student's deposit account upon refund, for which record certification service is furnished including three copies of record. Additional copies of records50
Special examination fee	5.00
Speech Clinic fees:	
Special Clinical Treatment (for students)	5.00 per term
Special Clinical Treatment (for nonstudents)	
Articulatory cases	
1 lesson per week	15.00 per 10 weeks
2 lessons per week	25.00 per 10 weeks
3 lessons per week	30.00 per 10 weeks
4 lessons per week	35.00 per 10 weeks
5 lessons per week	40.00 per 10 weeks
Stutterers	
Full-time remediation	100.00 per 7 weeks
Half-time remediation	50.00 per 7 weeks
One-quarter time remediation	30.00 per 7 weeks
Thesis binding fee, Master's Thesis, Graduate School	2.50
Thesis publication fee, Ph.D. Thesis, Graduate School	50.00

GRADUATE SCHOOL

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

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

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

CANDIDACY FOR A DEGREE

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

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

MASTER'S DEGREE, PLAN A

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

program, except in social work where the time limit is eight years for the master of arts with a major in social work.

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

Theses of Summer Session students must be completed and registered in the Graduate School office at least eight weeks before the end of the term in which they take the degree (first term: Thursday, May 26, 1950; second term: Thursday, June 29, 1950).

MASTER'S DEGREE, PLAN B

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

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

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

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

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

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

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

GENERAL INFORMATION

For general information, for the requirements for admission as regular or as unclassified students, for general rules and regulations, and for the requirements for degrees in the different curricula offered by the college, students should consult one of the administrative officers or the *General Information Bulletin* and the complete *Bulletin of the College of Science, Literature, and the Arts*. (See also page 9 of this bulletin.)

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

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

Some of the courses scheduled in this *Summer Session Bulletin* by the School of Business Administration, the Medical School, the Institute of Technology, and the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine 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 pages 18-19.)

A double dagger (‡) indicates courses for which course fees are charged. See *Course Fees*, pages 14-17.

AMERICAN STUDIES

First Term

Hum.22. American Life II. The growth and interrelation of individualism and democracy, with particular attention to the status of minorities. (See *General Studies*, page 29) (3 cred.; all; no prereq.; IV MTWThF; 2P) Bowron

Second Term

Hum.23. American Life III. The place in American civilization of work, the pursuit of happiness, the good life: their implications and interrelations. (See *General Studies*, page 30) (3 cred.; all; no prereq.; IV MTWThF; 308F) Bezanson.

Am.Stu.200. Introduction to American Studies. (3 cred.; grad.; limited to candidates for the M.A. in American Studies; ar.; ar.) Smith

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

ANTHROPOLOGY

First Term

40.† Introduction to Anthropology. Man's physical and cultural development; the nature and significance of anthropology in modern life. (3 cred.; soph., jr., sr.; no prereq.; II MTWThF; 106TSMc) Spencer

† Students who have taken the old course Anth. 41 may not receive credit for 40.

- Soc.Sci.111. Cultural Relations: Instrument of Peace or War?** Investigation of fundamental factors underlying international relations, the effect of different national cultures and especially ideologies upon the problems of peace and war. (3 cred.; jr., sr., grad.; prereq. 6 cred. in soc. sci.; IV MTWThF; NHAud) Levi (coordinator), Edwards, Kohn, Mander, Spencer, Wirth
- 122. Problems in Anthropology.** Individually directed readings. (Cred. ar.; jr., sr., grad.; prereq. cons. of instr.; ar.; ar.) Spencer

Second Term

- 42. Introduction to World Ethnology.** Man's first appearance in the Old and New Worlds; the formation of culture patterns and the spread and adaptation of culture to various environments in Asia, Africa, the South Seas, and among the American Indians; changes in the art, beliefs, and institutions of primitive communities as observed in modern times. (3 cred.; soph., jr., sr.; no prereq.; I MTWThF; 106TSMc) Spencer
- 80. The American Indian.** A survey of the native cultures of the New World. Physical and cultural characteristics. (3 cred.; jr., sr.; no prereq.; II MTWThF; 106TSMc) Spencer
- 114. Anthropological Analysis of American Culture.** The course will examine how the anthropologist's way of thinking and his methods of work may be applied to an analysis of American culture. (3 cred.; jr., sr., grad.; III MTWThF; 106TSMc) Powdermaker
- 123. Problems in Anthropology.** (See 122, first term) (Cred. ar.; ar.; ar.) Spencer, Powdermaker
- 164. American Minority Peoples.** A critical study of the problems of racial, religious, and national minorities in the United States, stressing similarities and differences in these problems. The course analyzes both the historical backgrounds of these groups and contemporary developments. (3 cred.; jr., sr., grad.; IV MTWThF; 106TSMc) Powdermaker

ART

First Term

HISTORY OF ART

- Art1.‡ Introduction to Art.** (Page 34†) (3 cred.; no prereq.; III MTWThF; 207NH) Arnason
- Art108.* Medieval Arts and Architecture.** (Page 35†) (3 cred.; jr., sr., grad.; prereq. 9 cred. in art or 9 cred. in hist. or lit. or cons. of instr.; II MTWThF; 207NH) Tselos
- Art158.* Twentieth-Century European and American Painting: 1900-1950.** The growth of modern painting and of the postimpressionist inheritance; French Fauves and German Expressionists; the impact of primitive art and its assimilation in cubism; the puristic defections and rise of Dada and surrealism; the new objectivity, the new romanticism and the new eclecticism; special attention will be given to peculiarly American assimilation of the European phases of painting. (3 cred.; jr., sr., grad.; prereq. 9 cred. in art or 9 cred. in hist. or lit. with cons. of instr.; IV MTWThF; 207NH) Tselos
- Art236.* Seminar: Special Problems in Art History and Criticism.** (Cred. ar.; prereq. cons. of instr.; ar.; ar.) Arnason, Tselos

DESIGN

- Art4,5.‡ General Design.** (Page 34†) (3 cred.; prereq. 1; I-II MTWThF; 104J) Torbert

† For description see the *Bulletin of the College of Science, Literature, and the Arts*, 1949-50.

- Art44,45.‡ Design Workshop.** (Page 35†) (3 cred.; prereq. 1; I-II MTWThF; 11J) Morton
- Art63,64,65.‡ Commercial Design.** (3 cred.; prereq. 6 cred. gen. des. and 6 cred. draw. or cons. of instr.; III-IV MTWThF; 104J) Torbert
- Art73,74,75.‡ Presentation Techniques.** A study of the communication of visual ideas in the fields of exhibition techniques, illustration, and in advertising. (3 cred.; prereq. 5 and 62 or cons. of instr.; V-VI MTWThF; 104J) Downs
- Art143,144,145.‡ Design in Jewelry.** (Page 37†) (3 cred.; prereq. 5, 21, 45; III-IV MTWThF; 11J) Morton
- Art153,154,155.‡ Industrial Design.** The course is concerned with the analysis of products designed for industrial production combined with practical workshop problems. (3 cred.; jr., sr., grad.; prereq. cons. of instr.; III-IV MTWThF; 2J) Downs

PAINTING AND PRINTS

- Art20,21.‡ Drawing and Painting I.** (Page 35†) (2 cred.; prereq. 1 or cons. of instr.)
 Sec. 1, I-II MTWF, 207aJ, Arnest Sec. 3, V-VI MTWF, 207bJ, Quirt
 Sec. 2, III-IV MTWF, 207bJ, Myers
- Art30,31,32.‡ Technical Drawing.** Freehand drawing, perspective, rendering, lettering, illustration. Of particular interest to medical, dental, scientific, and technical students. (2 cred.; no prereq. for 30; I-II MTWF; 417E) Doseff
- Art60,61,62.‡ Drawing and Painting II.** Advanced drawing, water color, gouache. (3 cred.; prereq. 21 or cons. of instr.)
 Sec. 1, III-IV MTWThF, 417E, Doseff Sec. 3, III-IV MTWThF, 207bJ, Myers
 Sec. 2, I-II MTWThF, 207aJ, Arnest
- Art70,71,72.‡ Drawing and Painting III.** Oil painting, advanced problems in drawing and design. (3 cred.; prereq. 62 or cons. of instr.)
 Sec. 1, III-IV MTWThF, 200aJ, Arnest Sec. 2, I-II MTWThF, 200aJ, Quirt
- Art90,91,92.‡ Print Processes.** Engraving, etching, block prints. (3 cred.; prereq. 62 or cons. of instr.; V-VI MTWThF; 203J) Myers
- Art150,151,152.‡ Problems in Painting and Prints.** (Cred. ar.; prereq. cons. of instr.)
 Sec. 1, III-IV MTWThF, 200aJ, Arnest Sec. 3, V-VI MTWThF, 203J, Myers
 Sec. 2, I-II MTWThF, 200aJ, Quirt
- Art200,201,202.‡ Advanced Problems.** (Cred. ar.; prereq. cons. of instr.; ar.; ar.) Arnest, Myers, Quirt

PHOTOGRAPHY

- Art10.‡ Photography.** (Same as Jour. 10) Fundamental principles of photography; use of cameras, developing, printing, and other elementary techniques. (Limited to 20 students) (3 cred.; soph., jr., sr.; no prereq.)
 Lect. V T, 311MurH, Liebling Lab. VI-IX MW, 20MurH, Liebling

SCULPTURE AND CERAMICS

- Art33,34,35.‡ Sculpture I.** Modeling. (3 cred.; prereq. 1; I-II MTWThF; 10J) Ar.
- Art83,84,85.‡ Sculpture II.** Carving. (3 cred.; prereq. 35; I-II MTWThF; 10J) Ar.
- Art93,94,95.‡ Ceramics I.** (3 cred.; prereq. 5 and 45; III-IV MTWThF; 10J) Ar.
- Art183,184,185.‡ Sculpture III.** Special Problems. (Cred. ar.; prereq. cons. of instr.; hrs. ar.; ar.) Ar.
- Art193,194,195.‡ Ceramics II.** Special Problems. (Cred. ar.; prereq. cons. of instr.; ar.; 10J) Ar.

† For description see the *Bulletin of the College of Science, Literature, and the Arts*, 1949-50.

Second Term**HISTORY OF ART**

- Art1.‡ Introduction to Art.** (See first term) (III MTWThF; 207NH) Arnason
Art178.* The Art of China. (3 cred.; jr., sr., grad.; prereq. 9 cred. in art or 9 cred. in history or literature with cons. of instr.; II MTWThF; 207NH) Mather

DESIGN

- Art4,5.‡ General Design.** (See first term) (I-II MTWThF; 104J) Collins
Art73,74,75.‡ Presentation Techniques. (See first term) (III-IV MTWThF; 104J) Collins

DRAWING AND PAINTING

- Art20,21.‡ Drawing and Painting I.** (See first term)
 Sec. 1, I-II MTWF, 207aJ, Arnest Sec. 2, III-IV MTWF, 207bJ, Booth
Art60,61,62.‡ Drawing and Painting II. (See first term)
 Sec. 1, I-II MTWThF, 207aJ, Arnest Sec. 2, III-IV MTWThF, 207bJ, Booth
Art70,71,72.‡ Drawing and Painting III. (See first term)
 Sec. 1, III-IV MTWThF, 207aJ, Arnest Sec. 2, V-VI MTWThF, 207bJ, Booth
Art150,151,152.‡ Problems in Painting. (See first term)
 Sec. 1, III-IV MTWThF, 207aJ, Arnest Sec. 2, V-VI MTWThF, 207bJ, Booth
Art200,201,202.‡ Advanced Problems. (See first term) (Hrs. ar.; ar.) Arnest, Booth

ASTRONOMY**First Term**

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

Second Term

13. **Stellar and Practical Astronomy.** (See first term) (7:30 to 9:00 p.m. MW, approximately the latter half of the time being used in observation; 133Ph) Luyten
 20.‡ **Celestial Navigation.** Fundamentals and astronomical background of navigation. Practice in the actual determination of position on the sea and in the air, using the methods now in use in the army and navy. (5 cred.; all; no prereq.; VI-VII MTWF and one evening a week for observations; 358Ph. If there is sufficient demand, this course may also be taught at another hour) Luyten

BOTANY**First Term**

- 4.‡ **General Botany.** A survey lecture and laboratory course on plants and their human interest; characteristics of living matter; fundamental facts of growth, structure, and reproduction of plants; principles underlying inheritance, variation, organic evolution, and relations to environment. (5 cred.; all; no prereq.; lect., I MTWThF, 06Bo; lab., II-III MTWThF, 1,4,5Bo) Ar.
 194.*‡ **Problems.** Advanced work in some specialized field of botany. (1-5 cred.; jr., sr., grad.; prereq. cons. of instr.; ar.; ar.) Ar.

Second Term

- 5.‡ **General Botany.** (See 4, first term) (5 cred.; all; prereq. 4 or equiv.; lect., I MTWThF, 06Bo; lab., II-III MTWThF, 1,4,5Bo) Abbe
 195.*‡ **Problems.** (See 194, first term) (1-5 cred.; ar.; ar.) Ar.

For additional courses see Itasca Park Biological Station, page 75.

CLASSICS**First Term**

COURSE FOR WHICH NO KNOWLEDGE OF GREEK OR LATIN IS REQUIRED

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

GREEK

- 171.* **Independent Reading Course.** Designed to provide the advanced student, in consultation with the instructor, with selected reading materials suitable for a well-balanced program. (3 cred.; jr., sr., grad.; prereq. cons. of instr.; II MTWThF; 103F) McDonald

LATIN

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

Second Term

COURSE FOR WHICH NO KNOWLEDGE OF GREEK OR LATIN IS REQUIRED

- 24.† **Technical Terms of Science, Medicine, and the Humanities.** (See first term) (III MTWThF; 5F) Swanson

GREEK

- 171.* **Independent Reading Course.** (Same as Greek 171, first term, but different authors will be read. (II MTWThF; 103F) Swanson

LATIN

- 171.* **Independent Reading Course.** (Same as Latin 171, first term, but different authors will be read. (II MTWThF; 103F) Swanson

CULTURAL RELATIONS

See Soc.Sci.111, page 30, and International and Intercultural Relations, page 34.

COMMUNICATION

See pages 28, 30 and 60.

ECONOMICS

See School of Business Administration, page 120,
and Agricultural Economics, page 69.

† Credit will be allowed in either Classics or English.

ENGLISH¶¶

First Term

LITERATURE

22. **Introduction to Literature.** Dryden, Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding, and Sheridan. (6 cred.; all; prereq. †; I-II MTWThF; 11F) Buckley
39. **Twentieth-Century Literature.** The novel since Thomas Hardy. This course, as a general introduction to the intelligent reading of literature, is intended for all students in all colleges, and not particularly for those meaning to specialize in English. (3 cred.; all; prereq. †; III MTWThF; 303F) Wanning
55. **Shakespeare.** The reading of selected comedies—*A Midsummer Night's Dream, The Merchant of Venice, Much Ado about Nothing, Twelfth Night, Measure for Measure, The Tempest.* Assignment of other comedies for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq. §.)
 Sec. 1, I MTWThF, 107F, Blum Sec. 2, II MTWThF, 107F, Marx
56. **Shakespeare.** The reading of selected histories and tragedies—*Richard II, Henry IV, 1 and 2, Henry V, Julius Caesar, Hamlet, Othello, Macbeth.* Assignment of other historical plays for independent reading optional with the instructor. (3 cred.; jr., sr.; prereq. §; I MTWThF; 305F) Ar.
74. **American Literature.** Notable American authors from Whitman to Hemingway. (3 cred.; jr., sr.; prereq. §; II MTWThF; 301F) Randel
75. **Chaucer.** The reading of selections from the *Canterbury Tales*, with introduction dealing with the grammar and literary forms of fourteenth-century English. (3 cred.; jr., sr.; prereq. §; III MTWThF; 209F) Clark
- 108.* **Late Eighteenth-Century Poets.** The major poets 1750-1800; especially the transition to romanticism. (3 cred.; jr., sr., grad.; prereq. ††; III MTWThF; 205F) Quinlan
- 110.* **Romantic Poets of the Early Nineteenth Century.** Byron, Shelley, Keats, etc. (3 cred.; jr., sr., grad.; prereq. ††; IV MTWThF; 113F) Jackson
- 113.* **American Short Story.** A historical examination of the American short story from the eighteenth century to the present. (3 cred.; jr., sr., grad.; prereq. ††; III MTWThF; 11F) McDowell
- 114.* **The Midwest in Literature.** A major American region interpreted in the terms of literature. (3 cred.; jr., sr., grad.; prereq. ††; I MTWThF; 206F) Randel
120. **The Interpretation of Poetry.** A study of certain technical aspects of poetry in relation to poetic meaning. Analysis of a number of short poems. (3 cred.; jr., sr., grad.; prereq. ††; II MTWThF; 206F) Blum
- 129.* **Modern Drama, 1880 to the Present.** A survey of the chief dramatists, English, American, and Continental, from the time of Ibsen. (3 cred.; jr., sr., grad.; prereq. 55-56 or 126-127; III MTWThF; 206F) Hillhouse
- 142.* **Pope and Swift: a Study of Their Principal Works.** (3 cred.; jr., sr.; grad.; prereq. ††; II MTWThF; 205F) Quinlan
- 154.* **American Novel.** The history of the American novel from the beginning to Howells. (3 cred.; jr., sr., grad.; prereq. ††; II MTWThF; 303F) Bowron
- 162.* **Milton.** The minor poems, *Arcopagitica, Paradise Lost*, and *Samson Agonistes.* (3 cred.; jr., sr., grad.; prereq. 21-22 or 55-56; IV MTWThF; 303F) Clark

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

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

†† Six credits in Eng. lit. above A-B-C.

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

- 165. Introduction to Modern English.** (Formerly the Historical Study of Modern English.) The sounds and grammar, with some attention to syntax and vocabulary. (Required of education majors in English.) (3 cred.; jr., sr., grad.; prereq. ††; I MTWThF; 207F) Allen
- 174. American English.** The development of a distinctive vocabulary and pronunciation of American English; differences between it and British English; dialects in the United States. (3 cred.; jr., sr., grad.; prereq. 6 cred. in Eng. lit., including language, above A-B-C; III MTWThF; 207F) Allen
- 181a.* American Criticism Since 1900.** Examination of critical terms and major critical movements. (3 cred.; jr., sr., grad.; prereq. ††; IV MTWThF; 205F) Wanning
- 190.* Leftward Movement in American Literature, 1920-1940.** A study of the principal issues and episodes of the movement. (3 cred.; jr., sr., grad.; prereq. ††, registration limited, admission only by cons. of instr.; VII-VIII TTh; 108F) Thorp

COMPOSITION

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

- 4. Freshman Composition.** Practical training in writing and reading. (3 cred.; all; prereq. placement test)

Sec. 1, I MTWThF, 303F, Ar.

Sec. 2, III MTWThF, 107F, Ar.

- 5. Freshman Composition.** A continuation of Comp. 4. (3 cred.; all; prereq. Comp. 4 or Comm. 1; III MTWThF; 304F) Ar.

- 6. Freshman Composition.** A continuation of Comp. 5. (3 cred.; all; prereq. Comp. 4-5 or Comm. 1-2)

Sec. 1, I MTWThF, 304F, Ar.

Sec. 2, IV MTWThF, 209½F, Ar.

- 27. Advanced Writing.** A course in formal exposition, stressing adequate content, logical development, and organization of material. Not to be confused with Comp. 7. Instruction largely in individual conference. (3 cred.; all; prereq. †)

Sec. 1, II MTWThF, 8F, Del Plaine

Sec. 3, IV MTWThF, 207F, Ar.

Sec. 2, III MTWThF, 209½F, Marx

- 28. Advanced Writing.** A course in the writing of description and narration, stressing methods and technique, particularly in simple narratives of general or technical interest; biography, travel, expanded incident, process, sketch. Instruction largely in individual conference. (3 cred.; all; prereq. †; III MTWThF; 8F) Del Plaine

- 101. The Writing of Fiction.** A study of the principles of the composition of fiction. Class meetings are devoted to the analysis of examples drawn from standard sources. Writing by students is criticized in individual conferences. (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50 in comp. for undergraduates, or cons. of instr.)

Sec. 1, VII-VIII MW, 304F, Ross

Sec. 2, VII-VIII TTh, 304F, Ross

Second Term

LITERATURE

- 23. Introduction to Literature.** Wordsworth, Byron, Shelley, Keats, Lamb, Carlyle, Browning, and Arnold. (6 cred.; all; prereq. †; II & IV MTWThF; 205F) Hessler

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

†† Six credits in Eng. lit. above A-B-C.

37. **Twentieth-Century Literature.** The literature of opinion, biography, travel, etc., with some reading in the short story. This course, as a general introduction to the intelligent reading of literature, is intended for all students in all colleges, and not particularly for those meaning to specialize in English. (3 cred.; all; prereq. †; III MTWThF; 303F) Rathburn
55. **Shakespeare.** (See first term) (I MTWThF; 205F) Christie
56. **Shakespeare.** (See first term)
 Sec. 1, II MTWThF, 107F, Ar. Sec. 2, III MTWThF, 206F, Ar.
73. **American Literature.** Notable American authors from Edwards to Holmes. (3 cred.; jr., sr.; prereq. §; II MTWThF; 301F) Bezanson
75. **Chaucer.** (See first term) (IV MTWThF; 113F) Reisman
100. **Old English (Anglo-Saxon).** An introduction to the sounds and grammar with some prose reading. The relation to modern English is stressed. (6 cred.; jr., sr., grad.; prereq. ††; I-II MTWThF; 305F) Armstrong
- 106.* **Whitman and Mark Twain.** (3 cred.; jr., sr., grad.; prereq. ††; III MTWThF; 209F) Kazin
- 109.* **Romantic Poets of the Early Nineteenth Century.** Wordsworth, Coleridge, and Scott. (3 cred.; jr., sr., grad.; prereq. ††; IV MTWThF; 304F) Shain
- 130.* **Tennyson and Browning.** (3 cred.; jr., sr., grad.; prereq. ††; III MTWThF; 209½F) Shain
- 162.* **Milton.** (See first term) (II MTWThF; 206F) Unger
- 192.* **Studies in Melville.** A systematic study of his writings. (3 cred.; jr., sr., grad.; prereq. ††; VII-VIII TTh; 206F) Kazin
- 195.* **Cultural Tradition in the Twentieth-Century American Novel.** The late work of James and Howells; the novels of Wharton, Cather, Glasgow. (3 cred.; jr., sr., grad.; prereq. ††; IV MTWThF; 110F) Whicher
- 196.* **Studies in Emily Dickinson.** An intensive study of Dickinson's poetry against the background of her age. (3 cred.; jr., sr., grad.; prereq. ††; II MTWThF; 159TSF) Whicher
- 197.* **Seventeenth-Century Literature.** A survey of the prose of the century to 1660, with some consideration of the metaphysical and cavalier poets. (3 cred.; jr., sr., grad.; prereq. ††; IV MTWThF; 305F) Unger

COMPOSITION

4. **Freshman Composition.** (See first term) (II MTWThF; 303F) Ar.
5. **Freshman Composition.** (See first term) (III MTWThF; 304F) Ar.
6. **Freshman Composition.** (See first term) (III MTWThF; 305F) Reisman
27. **Advanced Writing.** (See first term) (II MTWThF; 304F) Ar.
28. **Advanced Writing.** (See first term)
 Sec. 1, II MTWThF, 11F, Ar. Sec. 2, III MTWThF, 207F, Ar.
102. **The Writing of Fiction.** (See 101, first term) (3 cred.; VII-VIII MW; 103F) Macdonald

FAMILY LIFE

See General Studies, pages 28 and 30.

FAMILY LIFE EDUCATION, MARRIAGE AND

See pages 98 and 104.

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

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

†† Six credits in Eng. lit. above A-B-C.

FOREIGN STUDY SEMINAR

See General Studies, below and page 30.

GENERAL STUDIES

First Term

COMMUNICATION

- Com.1.‡ Communication.** A course to help students use the English language more appropriately and persuasively and to develop their ability to receive mass communication with critical discrimination, giving special emphasis to the agencies of press and radio. The course includes constant practice in writing, speaking, reading, and listening. It provides for regular conferences with the instructor, and for use of auxiliary speech and recording equipment. This course is regarded as an equivalent of Comp. 4-5-6 in satisfying any requirements of the University. (3 cred.; all; prereq. placement test, corresponds to G.E.D. test No. 1; II MTWThF; 107TNM) Keeler
- Com.3. Communication.** (Continuation of 1-2) (3 cred.; all; prereq. 1-2; IV MTWThF; 107TNM) Welker

FAMILY LIFE

- F.L.1. Preparation for Marriage.** A discussion of such topics as the function of the family today, problems of dating and courtship, the engagement, relations of husband and wife, family crises and bases of marital stability. (3 cred.; all; no prereq.)
 Sec. 1, I MTWThF, 157TSF, Neubeck
 Sec. 2, III MTWThF, 159TSF, Dyer, Neubeck
- F.L.14.‡ Nutrition and Food Management.** Scientific principles of nutrition; food purchasing; food preparation and service. The class is limited to 24 students and will afford practical laboratory experience. (5 cred.; no prereq.; 1:30-3:30 p.m. MTWThF; 5UHS) Shepard
- F.L.15. The Home and Its Furnishing.** Present-day housing problems; choice of location; house plans as they affect family living; exterior and interior design; choice of appropriate furnishings and accessories; building furnishing costs. (3 cred.; all; no prereq.; II MTWThF; 206WeH) Ludwig
- F.L.25. Child Development and Adjustment.** Physical growth and care; development of basic habits, skills, attitudes, and adjustments; the development of self-control and the provision of good environment for child growth. (Students who have taken C.W. 40 or 80 may not receive cred. for this course.) (3 cred.; all; no prereq.; IV MTWThF; 111Bu) Ar.

FOREIGN STUDY

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

HUMANITIES

- Hum.1.‡ Humanities in the Modern World I.** The intellectual, political, and economic revolutions which gave humanity its modern world. Period: from about 1770 to about 1830. Authors: Voltaire, Rousseau, Burke, Paine, Goethe, and the poets. One historical novel. (3 cred.; all; no prereq.; II MTWThF; 111NH) Marsh

- Hum.2. Humanities in the Modern World II.** The Industrial Revolution and Liberalism. How these bulked large in the nineteenth century. Period: from about 1830 to about 1870. Authors: Carlyle, Mill, Marx, Ibsen, Zola, Dostoevsky, and the poets. (3 cred.; all; no prereq.; IV MTWThF; 9F) Bryan
- Hum.4. Humanities in the Modern World IV.** An introduction to the study of humanities since World War I. The authors include Freud, Lenin, Koestler, Malraux, T. S. Eliot, and others. The background topics include civilization between two wars, the impact of psychoanalysis, communism versus fascism, etc. (3 cred.; all; no prereq.; IV MTWThF; 111NH) Ames
- Hum.22. American Life II.** The growth and interrelation of individualism and democracy, with particular attention to the status of minorities. (See American Studies, page 20.) (3 cred.; all; no prereq.; IV MTWThF; 2P) Bowron
- Hum.51.‡ Humanities in the Modern World.** This course is similar to 1 except that it is confined to jrs. and srs. A student may not receive cred. for this course if he has completed 1. (3 cred.; jr., sr.; no prereq.; II MTWThF; 305F) Ames
- Hum.61.‡ The European Heritage.** The Greek view of life as expressed in the works of dramatists, philosophers, historians, sculptors, and architects. Readings: selected Greek tragedies and comedies, Plato's *Republic*, Aristotle's *Poetics*, and Thucydides' *History of the Peloponnesian War*. This course is similar to 11 except that it is confined to jrs. and srs. A student may not receive cred. for this course if he has completed 11. (3 cred.; jr., sr.; no prereq.; III MTWThF; 321F) Shaw

NATURAL SCIENCE

- Nat.Sci.165. Science in World Affairs.** Consideration of the social and intellectual problems raised by the advances of contemporary science with attention to proposed solutions. The discussions will deal with such matters as atomic energy, eugenics, nutrition, behaviorism, and treatment of science in totalitarian countries. (3 cred.; jr., sr., grad.; prereq. one year of biological and of physical science in high school or college or cons. of instr.; II MTWThF; 143Ph) Graubard
- Nat.Sci.175. Survey of Science History.** Examination of the monumental achievements of science during recent centuries with particular emphasis upon the culture, equipment, and beliefs which surrounded each development. A one-term summary of the longer course 171-172-173 and therefore not open to those who have taken any portion of that course. (3 cred.; jr., sr., grad.; prereq. one year of biological and of physical science in high school or cons. of instr.; III MTWThF; 145Ph) Graubard

PERSONAL ORIENTATION

- Per.Or.1. How to Study.** Practical assistance to the student in developing efficient study habits, organizing materials, training the memory, preparing for examinations, and improving the speed and comprehension of reading. (2 cred.; all; no prereq.)
 Sec. 1, I MTWThF, 109TSF, Harrell Sec. 2, III MTWThF, 109TSF, Renzaglia

SOCIAL SCIENCE

- Soc.Sci.1. Introduction to Social Science.** A study of the great social issues of our time and analysis of the proposed solutions. Information and insights from every source—sociological, economic, political, geographic, historical—are utilized to assist the student in making judgments necessary for effective citizenship. The entire course (1-2-3) but not any part of it, will satisfy the social science requirement under Plan I for admission to the Senior College of Science, Literature, and the Arts and the College of Education. (3 cred.; all; no prereq.; III MTWThF; 100NH) Naftalin

- Soc.Sci.3. Introduction to Social Science.** (Continuation of 1-2) (3 cred.; all; no prereq.; IV MTWThF; 100NH) Naftalin
- Soc.Sci.111. Cultural Relations: Instrument of Peace or War?** Investigation of fundamental factors underlying international relations, the effect of different national cultures and especially ideologies upon the problems of peace and war. (3 cred.; jr., sr., grad.; prereq. 6 cred. in soc. sci.; IV MTWThF; NHAud) Levi (coordinator), Edwards, Kohn, Mander, Spencer, Wirth

Second Term

COMMUNICATION

- Com.2. Communication.** (Continuation of 1) (3 cred.; all; prereq. 1; II MTWThF; 107TNM) Bryan

FAMILY LIFE

- F.L.1. Preparation for Marriage.** (See first term)
 Sec. 1, II MTWThF, 157TSF, Dyer
 Sec. 2, III MTWThF, 157TSF, Neubeck
 Sec. 3 (designed for those with professional interest), III MTWThF, 159TSF, Dyer
- F.L.15. The Home and Its Furnishing.** (See first term) (II MTWThF; 206WeH) Ludwig
- F.L.25. Child Development and Adjustment.** (See first term) (IV MTWThF; 100NH) Ar.

FOREIGN STUDY

- 162. Seminar for Foreign Study II.** (Continuation of 161) (6 cred.)

HUMANITIES

- Hum.2. Humanities in the Modern World II.** (See first term) (II MTWThF; 111NH) Turnbull
- Hum.3. Humanities in the Modern World III.** The impact of evolution; religion and morals in a changing world. Period: from about 1870 to about 1914. Authors: Huxley, Arnold, Turgeneff, Nietzsche, Shaw, Mann, and the poets. (3 cred.; all; no prereq.; IV MTWThF; 111NH) Neumeier
- Hum.4. Humanities in the Modern World IV.** (See first term) (II MTWThF; 204F) Livingston
- Hum.23. American Life III.** The place in American civilization of work, the pursuit of happiness, the good life: their implications and interrelations. (See American Studies, page 20.) (3 cred.; all; no prereq.; IV MTWThF; 308F) Bezanson
- Hum.52. Humanities in the Modern World.** This course is similar to 2 except that it is confined to jrs. and srs. A student may not receive cred. for this course if he has completed 2. (3 cred.; jr., sr.; no prereq.; II MTWThF; 207F) Swanson
- Hum.62. The European Heritage: Roman and Mediaeval Periods.** Roman ethical philosophies, Epicureanism and Stoicism, the Roman achievement in law. The Christian view of human life and destiny as expressed in literature and in Gothic architecture. Readings: Lucretius and Marcus Aurelius, Augustine, Dante, and Chaucer. This course is similar to 12 except that it is confined to jrs. and srs. A student may not receive cred. for this course if he has completed 12. (3 cred.; jr., sr.; no prereq.; III MTWThF; 110F) Livingston

PERSONAL ORIENTATION

- Per.Or.1. How to Study.** (See first term)
 Sec. 1, I MTWThF, 109TSF, Renzaglia Sec. 2, III MTWThF, 109TSF, Harrell

SOCIAL SCIENCE

- Soc.Sci.2. Introduction to Social Science.** (Continuation of 1) (3 cred.; all; no prereq.; III MTWThF; 111NH) Naftalin

GEOGRAPHY

First Term

- 41. Geography of Commercial Production.** An introductory course in economic geography with special emphasis on commodities of commercial significance. Particular attention is given to the world patterns of raw material occurrence and production, as well as to the associated centers of industrial fabrication. (5 cred.; all; no prereq.; I-II MTWThF; 103Bu) Weaver
- 105.* Geography of the Mediterranean Region.** A regional survey of the lands adjacent to the Mediterranean Sea, in southern Europe, western Asia, and northern Africa. The basic characteristics and problems of each area or country will be examined in the light of the competing cultures and economic forces, past and present, which have helped to shape its human geography. (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or cons. of instr.; V MTWThF; 103Bu) Humlum
- 106.* Geography of Scandinavia.** The physical and human geography of Denmark, Finland, Iceland, Norway, and Sweden considered both by individual countries and as a region. (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or cons. of instr.; III MTWThF; 103Bu) Humlum
- 107. Geography of the Soviet Union.** The character of and bases for the regional diversity of physical resources, population, agriculture, manufacturing, and transportation in the U.S.S.R. (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or cons. of instr.; IV MTWThF; 103Bu) Borchert
- 110. Geography of South America.** A regional survey of the physical resources, population, agriculture, manufacturing, and transportation in the countries of South America. (3 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or cons. of instr.; VI MTWThF; 103Bu) Borchert
- 301.* Research Problems in Geography.** (Cred. ar.; hrs. ar.; ar.) Staff

Second Term

- 1.† Geography of Physical Resources.** The character, causes, and significance of regional differences in the world's physical resources. (5 cred.; all; no prereq.; VI-VII MTWThF; 103Bu) Jennings
- 4.¶ Human Geography.** The geography of population and principal ways of life; the capacity of the earth for future population. (5 cred.; all; no prereq.; II & IV MTWThF; 103Bu) Broek
- 101. Western and Central Europe.** An introduction to the major physical and cultural regions of Europe, followed by a discussion of the population patterns, resources, and industries in the individual countries of western and central Europe. (5 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or cons. of instr.; I MTWThF; 103Bu) Lawton
- 122. Geography of East Asia.** The physiographic features of China, Korea, and Japan and forms of resource utilization in their regional diversity. Geographic aspects of the problems of population pressure, development of resources, and international trade. (5 cred.; jr., sr., grad.; prereq. 5 cred. in geog. or cons. of instr.; III MTWThF; 103Bu) Lawton
- 301.* Research Problems in Geography.** (Cred. ar.; hrs. ar.; ar.) Broek

† Not open to students who have previously taken 11.

¶ Not open to students who have previously taken 45.

GEOLOGY AND MINERALOGY

First Term

1. **General Geology (Geologic Processes and Their Results).** A study of the varied aspects of our natural environment with special reference to the influence of geologic processes and structures on landscape development. The interpretation of natural scenery produced by glaciers, streams, ground water, geysers, oceans, volcanoes, etc. Lectures supplemented by laboratory work with minerals and rocks. Also several field excursions. (5 cred.; all; no prereq.; I-II MTWThF; 210P) Thiel
- 100.‡ **Field Work in Northern Minnesota.** (July 15 to 30, approximately) Students interested in this field trip should consult the department. (3 cred.; jr., sr.; prereq. 25) Gruner, Wright
- 115.‡ **Field Work in Southeastern Minnesota.** (July 15 to 30, approximately) Stratigraphic methods and principles as illustrated by study of Cambrian and Ordovician rocks. (3 cred.; prereq. 25) Bell
- 150.‡§ **Field Geology (Black Hills).** (June 15 to July 15, approximately) (Cred. ar.; jr., sr., grad.; prereq. 125) Gruner
170. **Geologic Problems.** (3 cred.; jr., sr., grad.; prereq. cons. of major adviser; ar.; ar.) Thiel

Second Term

2. **Historical Geology.** A study of the probable conditions of earth origin, the antiquity of the earth and the evolution of the continents and of the life that inhabited the seas and the land areas of past ages. (5 cred.; all; prereq. 1 or 8; I-II MTWThF; 210P) Bell
170. **Geologic Problems.** (See first term) (3 cred.; ar.; ar.) Bell

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

Note—For further information, see instructors.

GERMAN

First Term

1. **Beginning A.** (5 cred.; all; no prereq.; I-II MTWThF; 209½F) Wangsness
- 3-4. **Beginning C or Intermediate.** (5 cred.; all; prereq. 2 or two years of high school German; I-II MTWThF; 209F) Pröttengeier
22. **Intermediate Conversation and Oral Practice.** (Offered only in German Institute. See page 54.) This course is intended for students who understand German fairly well but who need assurance in self-expression and a basic active vocabulary. A thorough study will be made of the material to be used in the conversation sections for the day. Then the students will subdivide into smaller groups and their entire time be devoted to actual conversation under the supervision of native teachers. (5 cred.; prereq. 1 and 2 or equiv.) Staff
66. **Advanced Oral Practice and Self-expression.** (Offered only in German Institute. See page 54.) This course is intended primarily to develop self-confidence in expressing ideas in German. It will consist of daily training in current German based on the techniques used by the Army Language Training School; prepared discussion on assigned topics with definite vocabulary preparation, short debates, oral reports, and oral criticisms of books and articles. (5 cred.; prereq. 3 and 4 or equiv.) Staff

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

107. **German Stylistics.** (Offered only in German Institute. See page 54) The purpose of this course is to enable advanced students and especially teachers of German to acquire a finer feeling for German style, a sense for shades of expression, and a complete mastery of certain grammatical and idiomatic difficulties. Model selections of prose will form the basis for imitative composition. The course aims to strengthen the background and broaden the range of the American teacher of German. (4 cred.; prereq. cons. of instr.) Staff
- 132.* **The "Schwank" of the Sixteenth Century.** (3 cred.; sr., grad.; prereq. 72 and 11 cred. above 59 or equiv.; III-IV TF; 208F) Downs
- 165.* **Artur Schnitzler.** (3 cred.; sr., grad.; prereq. 72 and 11 cred. above 59 or equiv.; III-IV MTh; 208F) Pfeiffer

Note—See page 54 for Modern Language Institute.

Second Term

2. **Beginning B.** (5 cred.; all; prereq. 1 or one year of high school German; I-II MTWThF; 209½F) Ramras
- 3-4. **Beginning C or Intermediate.** (See 3-4, first term) (I-II MTWThF; 209F) Menze
- 259.* **Reading in Major Field.** (3 cred.; grad.; prereq. 72 and 11 cred. above 59 or equiv.; ar.; ar.) Ramras

GREEK

See Classics, page 24.

HISTORY

First Term

1. **Civilization of the Modern World: Part I.** (3 cred.; all; no prereq.; I MTWThF; 209NH) Ar.
2. **Civilization of the Modern World: Part II.** (3 cred.; all; no prereq.; III MTWThF; 112Bu) Ar.
15. **Ancient Civilization: Part II.** (3 cred.; all; no prereq.; I MTWThF; 112Bu) Jones
20. **American History: Part I.** (3 cred.; soph., jr., sr.; no prereq.; I MTWThF; 111NH) Ar.
22. **American History: Part III.** (3 cred.; soph., jr., sr.; no prereq.; II MTWThF; 111Bu) Wachman
51. **Ancient Civilization: Part II.** (3 cred.; jr., sr.; not open to those who have cred. for 15; I MTWThF; 112Bu) Jones
61. **American History: Part III.** (3 cred.; jr., sr.; not open to those who have cred. in 22; II MTWThF; 111Bu) Wachman
- 65a. **Renaissance and Reformation: Part I.** (3 cred.; jr., sr.; III MTWThF; 221Bu) Bayley
70. **English Constitutional History: Part I.** (3 cred.; open to prelegal soph. with at least a C average in 4-5-6, 1-2-3, or in all their college work, and to jrs. and srs.; I MTWThF; 111Bu) Bayley
86. **American Colonies: Part I.** (3 cred.; jr., sr.; II MTWThF; 112Bu) Bridenbaugh
92. **The American West: Part III (The Far West).** (3 cred.; jr., sr.; III MTWThF; 111Bu) Osgood
95. **American Diplomatic History: Part III.** (3 cred.; jr., sr.; IV MTWThF; 112Bu) Warner
98. **Minnesota and the Northwest: Part II.** (3 cred.; jr., sr.; I MTWThF; 221Bu) Jordan

- 103a. **Renaissance and Reformation: Part I.** Students attend the class in 65a. (3 cred.; grad.; III MTWThF; 221Bu) Bayley
105. **Modern European History.** (3 cred.; jr., sr., grad.; II MTWThF; 221Bu) Kohn
- Soc.Sci.111. Cultural Relations: Instrument of Peace or War?** Investigation of fundamental factors underlying international relations, the effect of different national cultures and especially ideologies upon the problems of peace and war. (3 cred.; jr., sr., grad.; prereq. 6 cred. in soc. sci.; IV MTWThF; NHAud) Levi (coordinator), Edwards, Kohn, Mander, Spencer, Wirth
170. **Readings in Ancient History: Part I.** (3 cred.; sr., grad.; ar.; ar.) Jones
- 186d. **Readings in Minnesota and the Northwest: Part II.** (3 cred.; sr., grad.; ar.; ar.) Jordan
- 187a. **The West in American History: Part III.** (3 cred.; sr., grad.; ar.; ar.) Osgood
208. **Seminar in American History: American Eighteenth-Century Civilization.** (3 cred.; sr., grad.; ar.; ar.) Bridenbaugh

Second Term

3. **Civilization of the Modern World: Part III.** (3 cred.; all; no prereq.; I MTWThF; 213NH) Ar.
21. **American History: Part II.** (3 cred.; soph., jr., sr.; no prereq.; I MTWThF; 111Bu) Allen
60. **American History: Part II.** (3 cred.; jr., sr.; not open to those who have cred. in 21; I MTWThF; 111Bu) Allen
62. **Chinese History.** (3 cred.; all; no prereq.; IV MTWThF; 111Bu) Mather
66. **Medieval European History: Part II.** (3 cred.; jr., sr.; II MTWThF; 221Bu) Cazal
- 66a. **Renaissance and Reformation: Part II.** (3 cred.; jr., sr.; III MTWThF; 221Bu) Cazal
88. **The American Colonies: Part III.** (3 cred.; jr., sr.; I MTWThF; 112Bu) Tyler
104. **Medieval European History: Part II.** Students attend the class in 66. (3 cred.; grad.; II MTWThF; 221Bu) Cazal
- 104a. **Renaissance and Reformation: Part II.** Students attend the class in 66a. (3 cred.; grad.; III MTWThF; 221Bu) Cazal
109. **Twentieth-Century Europe: Part I.** (3 cred.; jr., sr., grad.; I MTWThF; 221Bu) Deutsch
146. **American Economic and Social History: Part I.** (3 cred.; jr., sr., grad.; II MTWThF; 111Bu) Loehr
151. **Social and Intellectual History of the United States: Part III.** (3 cred.; jr., sr., grad.; III MTWThF; 112Bu) Tyler
159. **Survey of Latin-American History: Part III.** (3 cred.; jr., sr., grad.; IV MTWThF; 221Bu) Allen
- 176c. **Readings in Twentieth-Century Europe: Part I.** (3 cred.; sr., grad.; ar.; ar.) Deutsch
188. **Readings in American Economic History: Part I.** (3 cred.; sr., grad.; ar.; ar.) Loehr

HUMANITIES

See General Studies, pages 28, 29 and 30.

INTERNATIONAL AND INTERCULTURAL RELATIONS

See Social Science 111, page 30.

The above course listed also under cooperating departments of anthropology, history, political science, psychology, and sociology for the first term.

SCHOOL OF JOURNALISM‡

First Term

- 10.‡ **Photography.** (Same as Art 10) Fundamental principles of photography; the use of cameras, developing, printing, and other elementary techniques. (Limited to twenty Journalism students) (3 cred.; soph., jr., sr.; no prereq.)
Lect. V T, 311MurH, Liebling Lab. VI-IX TTh, 20MurH, Liebling
13. **Introduction to Reporting.** Lectures, practice, and conferences. Practical work in news gathering, news writing, and news analysis. Study of news sources and problems of the reporter. Reports on aspects of leading American newspapers and on selected books dealing with the contemporary newspaper. (Limited to twenty-five in a section) (3 cred.; soph., jr., sr. with C av. or better; prereq. Eng. A-B-C or Comp. 4-5-6 or Comm. 1-2-3 or exemption from Eng. requirement)
Sec. 1, I-II MTWThF, 212MurH, Duncan
Sec. 2, III-IV MTWThF, 212MurH, Crumpler
15. **Newspaper Reporting.** Advanced reporting problems, both in news gathering and news writing. Extensive practice assignments. Specialized news sources. Writing the feature story with emphasis on personality, chronological, "color," and historical articles. (Limited to twenty-five) (3 cred.; soph., jr., sr.; prereq. C av. or better in 13-14 and in all work, or cons. of instr., and Comp. 27-28, which may be taken concurrently; I-II MTWThF; 210MurH) Hage
- 51.‡ **News Editing.** Instruction and practice in editing news copy, proofreading, headline writing, and news evaluation. News display and makeup. (Limited to twelve in a section) (3 cred.; jr., sr.; prereq. 14 and Senior College standing)
Lect. IV MW, 302MurH, Swanson Lab. 1, IV-V TTh, 206MurH, Swanson
2, VI-VII MW, 206MurH, Swanson
- 55.‡ **Advertising and Newspaper Topography.** The study of traditional and modern type designs. Principles of typographical arrangement of advertisements and newspaper pages. Lectures and laboratory work designed to teach the student how to work with type, how to prepare layouts, and the use of headline forms, copy blocks, illustrations, borders, type devices, and other layout and make-up patterns. The course is planned for supervisors of school publications as well as for undergraduate majors in journalism and others who have approval to enter the course under cooperative programs of the School of Journalism and other departments. (Limited to twelve in a section) (3 cred.; jr., sr.; prereq. for journalism majors, Senior College standing; for minors, 11 and 41)
Lect. VI MW, 311MurH, Barnhart Lab. 1, VI-VII TTh, 315,320MurH, Barnhart
2, VII-VIII MW, 315,320MurH, Barnhart
73. **Magazine Writing and Editing.** Lectures and conferences. The writing of nonfiction articles for periodicals, general and specialized, and for newspapers; instruction in magazine editing. Subjects and materials; analysis of manuscript markets; study of magazine policies and practices. Students with special training and aptitude may devote some attention to editing problems of book publishers. (Limited to twenty-five) (3 cred.; jr., sr.; prereq. 15, or cons. of instr.; I MTWThF; 302MurH) Kildow
82. **Supervision of School Publications.** Practical consideration of editorial, business management, and production problems facing supervisors of high school, junior college, and teachers college newspapers, magazines, yearbooks. (3 cred.; jr., sr.; prereq. cons. of instr.; III MTWThF; 308MurH) Kildow
94. **Newspaper Advertising.** The role of newspaper advertising; the newspaper's relations with the retail advertiser, national representative, and advertising agency; organization of advertising departments; rate structure; serv-

- ices. Practice in writing advertising copy, with particular emphasis upon retail advertising. (Enrolment of non-majors sharply limited) (3 cred.; jr., sr.; prereq. 51 and 55, or 41, 55, and cons. of instr.; IV MTWThF; 105MurH) Barnhart
- 109.* **History of Journalism.** Development of newspapers and periodicals from early beginnings in Europe through the 1860's in the United States. (3 cred.; jr., sr., grad.; prereq. 13 and Senior College standing; II MTWThF; 105MurH) Ford
- 111.* **International Communications.** A study of the channels of international communication and the news-gathering agencies. Factors affecting the flow of news throughout the world. The role of the foreign correspondent. The relation of the press and other communication agencies to foreign affairs and international understanding. (3 cred.; jr., sr., grad.; no prereq.; II MTWThF; 308MurH) Crumpler
- 113.* **Mass Communications.** Analysis of channels and barriers between the writer and the mass audience. Emphasis upon the problems of communicating information and ideas to group and mass audiences by newspaper, radio, film, television, books, and other media. Comparative studies of content and influence. (3 cred.; prereq. sr. or grad. students in jour. or sr. or grad. students who have cons. of instr.; I MTWThF; 308MurH) Swanson
- 121.* **The Newspaper in a Dynamic Society.** Economic, political, and social determinants of the character and content of the mass communications. Patterns of ownership, their effect on content, and their relative social utility. Government and mass communications. The press of the future. (3 cred.; jr., sr., grad.; prereq. 15 or 18 or cons. of instr.; III MTWThF; 311MurH) Gerald
- 140.* **Interpretation of Contemporary Affairs.** Analysis of major political, economic, and social developments that have public interest and significance, and their interpretation in the editorial, interpretative article, and commentary. A study of authoritative source materials in the backgrounding of the news. (Limited to twenty in a section) (3 cred.; sr., grad.; prereq. 51, 10 cred. in soc. st., or cons. of major adviser in jour.)
 Sec. 1, IV MTWThF, 308MurH, Duncan Sec. 2, IV MTWThF, 311MurH, Hage
- 210.* **Research in Communications Problems.** Individual research in historical or contemporary phases of newspaper, magazine, radio, or advertising fields. (3 cred.; prereq. grad. standing and cons. of director of the school; ar.; ar.) Staff

Second Term

14. **Newspaper Reporting.** Advanced reporting problems, both in news gathering and news writing. (Limited to twenty-five) (3 cred.; soph., jr., sr.; prereq. C av. in 13 and in all work, or cons. of instr.; I-II MTWThF; 212MurH) Patterson
18. **Principles of Advertising.** A basic foundation for beginners in advertising. Theory, principles, and functions of advertising. Relation of advertising to modern business organization and its place in marketing and distribution. Choice of appeals and media. Appropriations, schedules, campaigns. A survey of copy, layout, testing, and the laws affecting advertising. (3 cred.; soph., jr., sr.; prereq. 13, C av., and Comp. 27-28§; I MTWThF; 105MurH) Seehafer
- 55.‡ **Advertising and Newspaper Typography.** (See first term) (Limited to twelve in a section)
 Lect. VI MW, 105MurH, Wilson Lab. 1, VI-VII TTh, 315MurH, Wilson
 2, VII-VIII MW, 315MurH, Wilson
65. **Graphic Arts: Processes.** Letter press, offset, and gravure printing processes; engravings and copy preparation; use of inks and paper; significant graphic arts developments. Visits to printing and engraving plants. (3 cred.; § May be taken concurrently.

- jr., sr.; prereq. cons. of major adviser in the School of Journalism or in the School of Business Administration; II MTWThF; 105MurH) Wilson
- 68.‡ **Problems in Radio Writing.** The radio audience and its responses; planning and writing scripts in advertising, dramatics, public affairs, and other radio fields; training in fundamental broadcasting production problems; program-planning; radio station organization. (Limited to twenty-five) (3 cred.; jr., sr.; prereq. for jour. majors, 51 and cons. of instr.; for speech-radio majors, 13 and cons. of instr.; II MTWThF; 302MurH) Charnley
73. **Magazine Writing and Editing.** (See first term) (Limited to twenty-five) (IV MTWThF; 308MurH) Rafferty
86. **Advertising Copy Writing.** Advertising media; advertising appeals; techniques of writing advertising copy for periodicals, radio, direct mail, posters, brochures; the advertising campaign. (Limited to twenty-five) (3 cred.; jr., sr.; prereq. 51 or 41, and 55 and 65; III MTWThF; 308MurH) Seehafer
- 101.* **The Reporting of Public Affairs.** Training in reporting court trials; city, county, state, federal administrative and legislative agencies; politics, business, labor, and science. Field work is required to enable students to report trials, hearings, legislative sessions, and press conferences. (Limited to twenty-five) (3 cred.; jr., sr., grad.; prereq. 51 and enrolment as a journalism major; III MTWThF; 311MurH) Crumpler
- 110.* **History of Journalism.** The course begins with the rise of the popular press in the 1830's and deals generally with the emergence of the modern newspaper in America. Stress is placed on the major social influences that have shaped the pattern of the press. Contributions of leading publishers and editors are discussed. (3 cred.; jr., sr., grad.; prereq. 13 and Senior College standing; I MTWThF; 308MurH) Emery
- 141.* **Interpretation of Contemporary Affairs.** (See 140, first term) (Limited to twenty) (3 cred.; sr., grad.; prereq. 140; IV MTWThF; 311MurH) Patterson

LATIN

See Classics, page 24.

LINGUISTICS AND COMPARATIVE PHILOLOGY¶

First Term

RUSSIAN

1. **Beginning Russian.** Special attention to the needs of those who desire a reading knowledge of modern Russian. (4 cred.; all; no prereq.; I-II TWThF; 9F) Niemi

MARRIAGE AND FAMILY LIFE EDUCATION

See pages 98 and 104.

MATHEMATICS

First Term

1. **Higher Algebra.** A collegiate treatment of the topics of elementary algebra for those who have had one year of elementary algebra. (5 cred.; all; prereq. 1 yr. of elementary algebra in high school; open for cred. to any student offering not more than one-half year of high school higher algebra for entrance cred.; I-II MTWThF; 110F) Zink
6. **Trigonometry.** A treatment of logarithms and plane trigonometry. (5 cred.; all; prereq. plane geometry and either 1 or high school higher algebra; I-II MTWThF; 109F) Lewis

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

7. **College Algebra.** Selected topics in algebra commencing with quadratic equations and extending through the theory of equations and determinants, omitting logarithms. (5 cred.; all; prereq. 1 or high school higher algebra; III-IV MTWThF; 101F) Gelbaum
15. **Elementary Mathematical Analysis I.** This, together with 16, provides a course for premedical and other students who desire a survey of college mathematics including trigonometry, algebra, and calculus with emphasis on fundamental ideas rather than on technical preparation for more advanced courses in mathematics. (5 cred.; all; prereq. plane geometry and either 1 or high school higher algebra; III-IV MTWThF; 105F) Hatfield
20. **Mathematics of Investment.** The principles and applications of the theory of interest, annuities, amortization, valuation of bonds, sinking funds, and depreciation. (5 cred.; all; prereq. either 8 or 6 and 7; I-II MTWThF; 105F) Friberg
30. **Analytic Geometry.** A study of geometry by means of algebra. Topics included: Cartesian and polar coordinates, straight lines, circles, conic sections, loci of given equations, equations of given loci, solid analytic geometry. (5 cred.; all; prereq. 6 and 7 or 6 and 8 or 15 and 16; III-IV MTWThF; 104F) Olmsted
50. **Calculus I: Differential Calculus.** Includes derivatives and differentials of elementary functions; curve tracing; definitions of velocity, acceleration, curvature, etc.; maxima and minima; related rates; mean value theorems; indeterminate forms; infinite series; expansions of functions. (5 cred.; jr., sr.; prereq. 30; I-II MTWThF; 104F) Bearman
- 101.* **Foundations of Arithmetic and Algebra.** The real number system and its elementary operations. Definitions of positive and negative integers and rational and irrational numbers. Their relationships in terms of order, algebraic operations and topology. (3 cred.; jr., sr., grad.; prereq. 51; III MTWThF; 109F) Graves
106. **Differential Equations.** A first course in differential equations with emphasis on their applications in physics and geometry. (3 cred.; jr., sr., grad.; prereq. 51; II MTWThF; 102F) Nering
- 126.* **The Calculus of Finite Differences.** The basic definitions and formulas with applications to the summation of series, interpolation, numerical integration, and the solution of simple difference equations. The analogy between the calculus of finite differences and the infinitesimal calculus with an introduction to the Euler-Maclaurin summation formula. (3 cred.; jr., sr., grad.; prereq. 51; I MTWThF; 101F) Loud
- 136.* **Solid Analytic Geometry.** Algebraic treatment of planes and lines; direction cosines; systems of planes. Cylinders; surfaces of revolution. Quadric surfaces; tangent planes, ruled surfaces. Coordinate transformations, invariants. General equation of the second degree. (3 cred.; jr., sr., grad.; prereq. 50 or registration in 50; III MTWThF; 102F) Gibbens
- 139.* **Limits and Series.** The analytical theory of limits, with applications to infinite series. (3 cred.; jr., sr., grad.; prereq. 51; IV MTWThF; 102F) Graves
- 141.* **Crystallographic Groups.** Elementary notions of groups; two-dimensional and three-dimensional crystalline lattices; the application of group theory in the analysis of these lattices to determine all possible crystals. (3 cred.; jr., sr., grad.; prereq. 51; I MTWThF; 102F) Nering
- 176.* **Intermediate Differential Equations.** Topics in differential equations not contained in a first course but not requiring a broad background of analysis. Emphasis on linear equations of second order of interest in physics. (3 cred.; jr., sr., grad.; prereq. 106; II MTWThF; 101F) Loud

Second Term

1. **Higher Algebra.** (See first term) (I-II MTWThF; 105F) Moser
6. **Trigonometry.** (See first term) (I-II MTWThF; 110F) Fagen
7. **College Algebra.** (See first term) (I-II MTWThF; 101F) Barnett
16. **Elementary Mathematical Analysis II.** (See 15, first term) (5 cred.; III-IV MTWThF; 105F) Hatfield
20. **Mathematics of Investment.** (See first term) (I-II MTWThF; 109F) Haltiner
50. **Calculus I: Differential Calculus.** (See first term) (III-IV MTWThF; 104F) Ar.
51. **Calculus II: Integral Calculus.** Includes: Formal integration; geometrical and physical meaning of constants of integration; definite integrals; fundamental theorem of integral calculus; approximate integration; geometrical and physical applications; improper integrals; multiple integrals. (5 cred.; jr., sr.; prereq. 50; I-II MTWThF; 104F) Bearman
- 103.* **Advanced Analytic Geometry II.** Trilinear and other coordinate systems; an introduction to higher plane curves. (3 cred.; jr., sr., grad.; prereq. 51; II MTWThF; 102F) Carlson
- 109.* **Theory of Numbers.** Elementary properties of integers; prime and composite numbers; Euclid's logarithm; congruences; the theorems of Fermat and Wilson; primitive roots; indices; Galois imaginaries; finite algebras; Pythagorean and Heronian triangles; Diophantine equations. (3 cred.; jr., sr., grad.; prereq. 51; I MTWThF; 102F) Carlson
- 131.* **Advanced Algebraic Theory.** A study of the properties of polynomials, determinants, elementary theory of matrices, linear dependence, systems of linear equations. (3 cred.; jr., sr., grad.; prereq. 51; III MTWThF; 102F) Olmsted
- 135.* **Topics in the Development of Mathematics.** A discussion of the mathematics of the last three centuries, with an attempt to unify the major trends. Topics include the formal period, rigor, geometries, logical foundations, modern tendencies. (3 cred.; jr., sr., grad.; prereq. 51; III MTWThF; 101F) Gelbaum
- 179.* **Special Functions.** A discussion of the Gamma, Beta, and Bessel functions, spherical harmonics, Laguerre, Legendre, Tchebycheff and Hermite polynomials. Emphasis is on the properties and formal developments of these functions, with an attempt to unify and motivate their treatment. (3 cred.; jr., sr., grad.; prereq. 51; IV MTWThF; 101F) Gelbaum

MUSIC

First Term

1. **Fundamentals of Music.** (2 cred.; non-music majors—primarily c. w. and el. teachers; no prereq.; I MTWThF; 3ScH) Fetler
- 1T-2T-3T. **Music Theory.** An intensive course in the development of musicianship through both auditory and visual perception. The student will participate in extensive ear training, sight singing, and keyboard drills. (3 cred.; primarily for music majors and minors. Students must arrange for placement test in Music Department office; II-III MTWThF; 3ScH) Fetler
- 4T-5T-6T. **Music Theory.** A continuation of 1T-2T-3T with greater emphasis on harmonic analysis, part-writing, and clef reading. (4 cred.; prereq. 3T; IV-V MTWThF; 3ScH) George
- 11.‡ **Piano.** Two lessons a week. (2 cred.; ar.; ar.) Kendall, Rymer, Stephens
- 12.‡ **Voice.** Two lessons a week. (2 cred.; ar.; ar.) Hull, Schuessler
- 13.‡ **Violin.** Two lessons a week. (2 cred.; ar.; ar.) Cullen
- 13B.‡ **Violin.** Two lessons a week. (2 cred.; ar.; ar.) Druian
- 14.‡ **Viola.** Two lessons a week. (2 cred.; ar.; ar.) Barton
- 15.‡ **Cello.** Two lessons a week. (2 cred.; ar.; ar.) Meltzer

- 16.‡ **Double Bass.** Two lessons a week. (2 cred.; ar.; ar.) Fitch
- 17.‡ **Flute.** Two lessons a week. (2 cred.; ar.; ar.) Winkler, Arnegard
- 18.‡ **Oboe.** Two lessons a week. (2 cred.; ar.; ar.) Angelucci
- 19.‡ **Clarinet or Saxophone.** Two lessons a week. (2 cred.; ar.; ar.) Handlon, Fitch
- 20.‡ **Bassoon.** Two lessons a week. (2 cred.; ar.; ar.) Santucci
- 21.‡ **Trumpet.** Two lessons a week. (2 cred.; ar.; ar.) Greco, MacKay
- 22.‡ **French Horn.** Two lessons a week. (2 cred.; ar.; ar.) Linder
- 23.‡ **Trombone.** Two lessons a week. (2 cred.; ar.; ar.) MacKay
- 24.‡ **Tuba.** Two lessons a week. (2 cred.; ar.; ar.) MacKay
- 25.‡ **Percussion.** Two lessons a week. (2 cred.; ar.; ar.) Denecke
- 26.‡ **Harp.** Two lessons a week. (2 cred.; ar.; ar.) Ar.
- 27.‡ **Organ.** Two lessons a week. (2 cred.; ar.; ar.) Jennings
- 31.‡ **Music Literature.** Primarily for nonmusic majors. Study of various styles, forms, and types of music, including symphony, opera, chamber music, and solo pieces. (2 cred.; no prereq.; II MTWThF; 104ScH) Ivory
- 36.‡ **History of Music.** (2 cred.; all; no prereq.; III MTWThF; 103ScH) Ar.
46. **Concert Band.** (1 cred.; all with cons. of director; no prereq.; VI MTWThF; 4NMA) Prescott
- 60B,‡61B,‡62B.‡ **Instrumental Ensemble.** (2 cred.; jr., sr.; prereq. cons. of instr.; V MTWThF; 104ScH) Druian
- 73-74-75. **Advanced Harmony.** (2 cred.; jr., sr.; prereq. 6T or equiv.; II MTWThF; 103ScH) George
76. **Form and Analysis.** Key, harmonic, and form analyses of important contrapuntal and homophonic music, especially that of Bach and Beethoven. (3 cred.; jr., sr.; prereq. 6T; IV MTWThF; 103ScH) Stephens
- 77-78-79. **Composition.** (2 cred.; prereq. 4T-5T-6T, 7-8; ar.; ar.) Fetler
- 83-84-85. **Advanced Composition.** (2 cred.; prereq. 77-78-79; ar.; ar.) Ar.
- 86-87-88. **Orchestration.** (2 cred.; prereq. 6T; III MTWThF; 2ScH) George
101. **American Music.** (3 cred.; sr., grad.; prereq. cons. of instr.; IV MTWThF; 104ScH) Oberg
- 144.‡ **Opera Production (lecture).** A course designed to acquaint the student with (1) the history of opera, (2) the various theater techniques essential to stage production, (3) the use and values of opera in the high school and college curriculum, (4) the value of opera experience to the vocalist, actor and instrumentalist in the over-all development of the personality. (3 cred.; jr., sr., grad.; prereq. 9 cred. in music, music ed. or speech; VI MTWThF; 2,3,4ScH) Aliferis, Whiting, and staff
- 145.‡ **Opera Production (laboratory).** Exercise and practice in the organizing and conducting of vocal, instrumental, and acting groups involved in the production of opera, plus practical training in such technical skills as lighting, costuming, make-up, and scenic design. Each student must participate in one of the musical productions of the University Theatre. (3 cred.; jr., sr., grad.; prereq. 9 cred. in music, music ed. or speech; VII-VIII MTWThF; 2,3,4ScH) Aliferis, Whiting, and staff
- 205-206-207. **Composition in Larger Forms.** (3 cred.; grad.; ar.; ar.) Ar.
- 209-210-211. **Advanced Topics in Musical Analysis.** (3 cred.; grad.; II MTWThF; 2ScH) Oberg
- 212.* **Special Problems in Music.** (3 to 9 cred.; grad.; prereq. 202 or 211; ar.; ar.) Oberg

Second Term

1. **Fundamentals of Music.** (See first term) (IV MTWThF; 103ScH) Ar.
- 1T-2T-3T. **Music Theory.** (See first term) (II-III MTWThF; 3ScH) George
- 4T-5T-6T. **Music Theory.** (See first term) (IV-V MTWThF; 3ScH) George
- 11.‡ **Piano.** Two lessons a week. (2 cred.; ar.; ar.) Rymer
- 12.‡ **Voice.** Two lessons a week. (2 cred.; ar.; ar.) Schuessler

- 13.‡ **Violin.** Two lessons a week. (2 cred.; ar.; ar.) Cullen
 13B.‡ **Violin.** Two lessons a week. (2 cred.; ar.; ar.) Druian
 14.‡ **Viola.** Two lessons a week. (2 cred.; ar.; ar.) Barton
 15.‡ **Cello.** Two lessons a week. (2 cred.; ar.; ar.) Meltzer
 16.‡ **Double Bass.** Two lessons a week. (2 cred.; ar.; ar.) Fitch
 17.‡ **Flute.** Two lessons a week. (2 cred.; ar.; ar.) Winkler
 18.‡ **Oboe.** Two lessons a week. (2 cred.; ar.; ar.) Angelucci
 19.‡ **Clarinet or Saxophone.** Two lessons a week. (2 cred.; ar.; ar.) Handlon, Fitch
 20.‡ **Bassoon.** Two lessons a week. (2 cred.; ar.; ar.) Santucci
 21.‡ **Trumpet.** Two lessons a week. (2 cred.; ar.; ar.) Greco, MacKay
 22.‡ **French Horn.** Two lessons a week. (2 cred.; ar.; ar.) Linder
 23.‡ **Trombone.** Two lessons a week. (2 cred.; ar.; ar.) MacKay
 24.‡ **Tuba.** Two lessons a week. (2 cred.; ar.; ar.) MacKay
 25.‡ **Percussion.** Two lessons a week. (2 cred.; ar.; ar.) Denecke
 26.‡ **Harp.** Two lessons a week. (2 cred.; ar.; ar.) Ar.
 27.‡ **Organ.** Two lessons a week. (2 cred.; ar.; ar.) Ar.
 32.‡ **Music Literature.** (See 31, first term) (2 cred.; II MTWThF; 104ScH) Ivory
 35.‡ **History of Music.** (2 cred.; all; no prereq.; III MTWThF; 103ScH) Oberg
 60B,‡61B,‡62B.‡ **Instrumental Ensemble.** (See first term) (V MTWThF; 104ScH) Druian
 73-74-75. **Advanced Harmony.** (See first term) (II MTWThF; 103ScH) Ar.
 77-78-79. **Composition.** (See first term) (ar.; ar.) George
 83-84-85. **Advanced Composition.** (See first term) (ar.; ar.) Ar.
 86-87-88. **Orchestration.** (See first term) (I MTWThF; 103ScH) Ar.
 205-206-207. **Composition in Larger Forms.** (See first term) (ar.; ar.) Ar.
 209-210-211. **Advanced Topics in Musical Analysis.** (3 cred.; grad.; II MTWThF; 2ScH) Oberg
 212.* **Special Problems in Music.** (See first term) (ar.; ar.) Oberg

NATURAL SCIENCE

See General Studies, page 29.

PERSONAL ORIENTATION

See General Studies, pages 29 and 31.

PHILOSOPHY

First Term

- 1. Problems of Philosophy.** Introduction to the subject; the main fields of investigation; permanent problems; principal methods and schools of philosophy; historical and contemporary views. (3 cred.; soph., jr., sr.; no prereq.; II MTWThF; 6F) Sellars
- 2. Logic.** A study of the difference between logical and fallacious reasoning; the rules of a good definition; syllogisms; what constitutes proof; hypothesis; generalization; probability. (3 cred.; soph., jr., sr.; no prereq.; IV MTWThF; 305F) Searles
- 3. Ethics.** Problems of life treated in terms of (1) contemporary social, political, and economic forces, and (2) the character of the individual. The psychological and philosophical foundations of morality, the reconstruction of morality; the history of morals and ethical thought. (3 cred.; soph., jr., sr.; no prereq.; III MTWThF; 308F) Brodbeck

9.‡ General Physics, Part I. Sound and light. (Primarily for students in the Inst. of Tech. and those majoring in phys., math., or chem.) Lab. (one 2-hr. period) included. (2½ cred.; all; prereq. 7) Valasek

Lect. and quiz II MTWThF, 133Ph	Lab. 4, VI-VII F, ar.
Lab. 1, III-IV M, ar.	5, III-IV W, ar.
2, VIII-IX M, ar.	6, VIII-IX W, ar.
3, III-IV T, ar.	

131. Geometrical Optics. Theory of mirrors, prisms, and lenses. Theory of diaphragms and brightness of images. Optical instruments. (3 cred.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 51; lect. IV MTWThF, 145Ph) Valasek

144.*‡ Electrical Measurements. An experimental course covering ballistic and current galvanometers, magnetic flux measurements, potentiometer methods, D.C. bridges, and audiofrequency A.C. bridges. (3 cred.; jr., sr., grad.; prereq. 15 cred. in phys., Math. 51; lect. II MTWThF, 145Ph; lab. VI-IX TTh, 231Ph) Wall

Second Term

2. Introduction to Physical Science. Electricity. (See 1, first term) (3 cred.; lect. I MTWThF; 150Ph) Kruglak

2a.‡ Introduction to Physical Science. Electricity. (See 1a, first term) Lab. (two 2-hr. periods) included. (4 cred.) Kruglak

Lect. I MTWThF, 150Ph	Lab. 2, VI-VII MW, ar.
Lab. 1, III-IV TTh, ar.	3, VIII-IX TTh, ar.

5.‡ General Physics: Part II. (See 5, first term) Weinberg

7.‡ General Physics: Part II. (See 7, first term) Nafe

9.‡ General Physics: Part II. (See 9, first term) Weinberg

107.* Modern Physics. Lectures and readings on selected topics in contemporary fields of research. (3 cred.; jr., sr., grad.; prereq. a general course in phys., Math. 51; II MTWThF; 145Ph) Nafe

110.‡ Modern Experimental Physics. Laboratory work. Characteristics of vacuum gauges, mass spectroscopy, electronic tubes and associated circuits, radioactivity, Geiger counters, ionization of gases. (3 cred.; jr., sr., grad.; prereq. 144; VI-IX MWF; 49Ph) Schmitt

POLITICAL SCIENCE

First Term

1. American Government and Politics. (Part I of 1-2-3) An examination of the fundamentals of American government, nature and growth of the Constitution, citizenship, individual rights and liberties, political parties, public opinion, nominations and elections. (3 cred.; all; no prereq.; I MTWThF; 213NH) Christensen

3. American Government and Politics. (Part III of 1-2-3) The role and functions of American government in the spheres of business, social welfare, defense, and foreign affairs. (3 cred.; all; no prereq. VI MTWThF; 216NH) Eriksen

A.‡ The State in the Modern World. (Part A of A-B-C) The development, principles, structure, and operation of the modern nation state. (3 cred.; all; no prereq.; III MTWThF; 216NH) Potter

25. World Politics. An introduction to the field of contemporary international relations, the policies of the great powers today, nationalism, internationalism, Europe and the postwar settlement. (3 cred.; all; no prereq.; VI MTWThF; 211NH) Stauffer

108.* Legislative Organization and Procedure. A study of Congress and the state legislatures at work. (3 cred.; jr., sr., grad.; prereq. 6 cred.; III MTWThF; 209NH) Short

‡ Students may not receive cred. for A if they have received cred. for the old 9-10 or 15.

- Soc.Sci.111.* Cultural Relations: Instrument of Peace or War?** Investigation of fundamental factors underlying international relations, the effect of different national cultures and especially ideologies upon the problems of peace and war. (3 cred.; jr., sr., grad.; prereq. 6 cred. in soc. sci.; IV MTWThF; NHAud) Levi (coordinator), Edwards, Kohn, Mander, Spencer, Wirth
- 120. Municipal Functions.** A general survey of "line" functions: safety, health, welfare, works, utilities, etc. (3 cred.; prereq. 6 cred. or cons. of instr.; I MTWThF; 101NH) Ludwig
- 121. Municipal Administration.** Forms of administrative organization; personnel; purchasing; budgeting, accounting, and reporting; records and accounts; finance. (3 cred.; jr., sr., grad.; prereq. 120 or cons. of instr.; II MTWThF; 101NH) Ludwig
- 137.* American Political Parties.** A survey of the historical and contemporary activities of American political parties, the boss and the machine, nomination of candidates, party propaganda in elections, the services of parties in a democracy. (3 cred.; jr., sr., grad.; prereq. 6 cred. in pol. sci. or 12 cred. in soc. sci., or cons. of instr.; IV MTWThF; 216NH) Christensen
- 143.* The Government of the U.S.S.R. and Adjacent States.** (3 cred.; jr., sr., grad.; prereq. 6 cred.; II MTWThF; 209NH) McClosky
- 161.* Problems of Democracy.** The meaning of democracy; an examination and evaluation of the criticisms and defenses of democracy; an analysis of democratic institutions in America with special reference to the problems of postwar reconstruction. (3 cred.; jr., sr., grad., others with cons. of instr.; I MTWThF; 133Ph) McClosky
- 178.* Foreign Relations Agencies and Methods.** A rapid survey of the organization, functions, and problems of principal agencies in the United States concerned with formulation of foreign policy and administration of foreign relations: the Department of State, the Foreign Service, Presidential and Congressional functions. Some comparisons with European foreign offices and diplomatic establishments will be made. (3 cred.; jr., sr., grad.; not open to students who have completed 175 or 176; no prereq.; III MTWThF; 111NH) McLaughlin
- 183.* International Law in the Postwar World.** A survey of recent legal problems in connection with military occupation, war crimes, use and outlawry of atomic weapons, international guaranties of civil liberties, the veto power and regional defense pacts in the UN security system. Suggestions for the modernization of international law; prospects for codification. (3 cred.; jr., sr., grad.; no prereq.; I MTWThF; 216NH) McLaughlin
- 186.* International Functions.** The problems of attainment of security and economic and social welfare through national, regional, and global agencies; administrative aspects of international organization. (3 cred.; jr., sr., grad.; no prereq.; II MTWThF; 216NH) Mander
- 246.* Seminar in Far Eastern Politics.** (3 cred.; sr., grad.; prereq. 3 cred. in Far Eastern field or cons. of instr.; VII-VIII MW; 212NH) Quigley
- 248.* Seminar in International Organization.** (3 cred.; sr., grad.; prereq. cons. of instr.; first meeting 12:00 m. first day of classes; ar.; ar.) Levi, Mander

Second Term

1. **American Government and Politics.** (See first term) (I MTWThF; 209NH) Warp
 2. **American Government and Politics.** (Part II of 1-2-3) Organization of national, state, and local governments; legislative, executive, and judicial branches and their procedures. (3 cred.; all; no prereq.; VI MTWThF; 106NH) Davis
- B.† The State in the Modern World.** (Part B of A-B-C) (See A, first term) (3 cred.; I MTWThF; 216NH) Potter

† Students may not receive cred. for B if they have received cred. for the old 9-10.

25. **World Politics.** (See first term) (II MTWThF; 211NH) Mills
- 100.* **The Constitution and Social Change.** Constitutional problems involved in the use of political authority to carry on social and economic organization; special attention will be given to compulsory health insurance, agricultural stabilization proposals, and modern aspects of constitutional interpretation. (3 cred.; jr., sr., grad.; prereq. 6 cred. or cons. of instr.; II MTWThF; 216NH) Field
- 135.* **Problems of Public Planning.** Development, nature, and objectives of governmental planning; areas, fields, and methods of planning. (3 cred.; jr., sr., grad.; prereq. 6 cred. or cons. of instr.; III MTWThF; 216NH) Warp
- 160.* **American Political Thought.** Evolution of major theories of American political writers, and of popular political ideas. (3 cred.; jr., sr., grad.; no prereq.; IV MTWThF; 213NH) Field
- 162.* **Recent Political Thought.** An examination and evaluation of the political philosophy of democracy, socialism, communism, and fascism. (3 cred.; jr., sr., grad.; prereq. 6 cred. or cons. of instr.; III MTWThF; 209NH) Ewing
- 196.* **Colonial Government and Problems of Imperialism.** Varieties of colonial rule in contemporary empires; nationalism and self-government; health and other tropical problems. (3 cred.; jr., sr., grad.; no prereq.; IV MTWThF; 216NH) Mills
- 207.* **Seminar in Theories of Law and Politics.** (3 cred.; sr., grad.; prereq. 6 cred. or cons. of instr.; first meeting 12:00 m. first day of classes; ar.; ar.) Ewing

PSYCHOLOGY

First Term

1. **General Psychology.** (First half of 1-2) (3 cred.; soph., jr., sr.; no prereq.)
Sec. 1, II MTWThF, 202WuH, Russell Sec. 2, IV MTWThF, 202WuH, H. Rosen
- 1-2.† **General Psychology.** An introductory survey of psychology; its materials, fundamental laws, applications, and relations to other sciences. (6 cred.; soph., jr., sr.; no prereq.)
Sec. 1, I-II MTWThF, 110P, Sundberg Sec. 2, III-IV MTWThF, 110P, Morgan
- 4-5.‡ **Introductory Laboratory Psychology.** Simple experiments illustrating subject matter of contemporary psychology. Included are human and animal learning, visual experience, differences in artistic, musical, and other kinds of abilities, measurement of each student's personality traits, and reactions to advertisements. (4 cred.; soph., jr., sr.; prereq. gen. psy.; VI-VIII MTWThF; 211Psy) Soar
90. **Readings in Psychology.** (Cred. ar.; jr., sr.; prereq. 1-2 and 3 additional cred., and written cons. of instr.; hrs. ar.; ar.) Staff
- Soc.Sci.111. **Cultural Relations: Instrument of Peace or War?** Investigation of fundamental factors underlying international relations, the effect of different national cultures and especially ideologies upon the problems of peace and war. (3 cred.; jr., sr., grad.; prereq. 6 cred. in soc. sci.; IV MTWThF; NHAud) Levi (coordinator), Edwards, Kohn, Mander, Spencer, Wirth
- 125-126.† **Psychology of Individual Differences.** Quantitative studies of such factors as age, sex, race, and nationality, physical traits, family heredity, and environment in the causation of individual differences in abilities and temperament. (6 cred.; jr., sr., grad.; prereq. 1-2, 4-5, or 5 cred. in statistics; II-III MTWThF; 115Psy) Jenkins
128. **Psychology of Learning.** A review and comparison of the modern theories of learning: connectionism, associationism, conditioning, and field theories. The application of the theories to practical situations will be indicated as the occasion demands. (3 cred.; jr., sr., grad.; prereq. gen. psy.; IV MTWThF; 115Psy) Heron

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

- 138. Psychology of Motivation and Conflict.** A study of the motives which underlie normal human behavior and the forms of adjustment or maladjustment which arise when motives conflict or encounter external frustration. Parallel observations in the field of animal behavior will be considered. (3 cred.; jr., sr., grad.; prereq. gen. psy.; IV MTWThF; 211Bu) Russell
- 140. Social Psychology.** A survey of the theory, techniques, and problems of social psychology today. (3 cred.; jr., sr., grad.; prereq. 1-2, 4-5, and 9 cred. in soc. sci.; II MTWThF; 213NH) Edwards
- 144-145. Abnormal Psychology.** A survey of ideas of causation and of techniques of treating abnormal behavior from early historical times. Consideration of the various psychoses and psychoneuroses. (6 cred.; jr., sr., grad.; prereq. gen. psy.; II-III MTWThF; 2P) E. Rosen
- 160. Psychology in Personnel Work.** Psychology as applied to the selection and retention of a stabilized personnel in business. The standardized interview; principles and techniques of employment tests; methods of judging character qualities; the rating scale; personnel classification methods. (3 cred.; jr., sr., grad.; prereq. gen. psy.; II MTWThF; 211Psy) H. Rosen
- 250. Topics in Psychology.** (Cred. ar.; grad. students only, with cons. of instr.; hrs. ar.) Staff

Second Term

- 1-2.† General Psychology.** (See first term) (I-II MTWThF; 110P) R. Swanson
- 2. General Psychology.** (Second half of 1-2) (3 cred.; soph., jr., sr.; prereq. first half of 1-2)
 Sec. 1, II MTWThF, 202WuH, ar. Sec. 2, IV MTWThF, 202WuH, ar.
- 4-5.‡ Introductory Laboratory Psychology.** (See first term) (I-III MTWThF; 211Psy) Farr
- 56. Psychology of Advertising.** Psychological analysis of the basic principles underlying advertising and selling. Consumer research is stressed. Research techniques for investigating advertising problems and the analysis of consumer wants are considered in detail. (3 cred.; jr., sr.; prereq. 1-2 and Principles of Econ.; IV MTWThF; 2P) Longstaff
- 90. Readings in Psychology.** (See first term) (hrs. ar.; ar.) Staff
- 119. Psychology of Personality.** A study of personality in normal individuals, especially from the standpoints of the nature of personality processes, and methods of studying personality characteristics. (3 cred.; jr., sr., grad.; prereq. 12 cred. in psy.; II MTWThF; 115Psy) E. Rosen
- 135-136-137.‡‡ Occupational Counseling.** Occupational formation as used in counseling. Study of educational and occupational training opportunities and requirements. Psychological techniques in case analysis, interviewing, and remedial work. Types of vocational problems. Illustrative case histories. (6 cred.; sr., grad.; prereq. for 135-136, 9 cred. or cons. of instr., for 137, 130; II-III MTWThF; 2P) Brayfield
- 250. Topics in Psychology.** (Cred. ar.; grad. students only, with cons. of instr.; hrs. ar.; ar.) Staff
- 290. Theory of Projective Techniques.** A general survey of the field of projective methods, including a didactic introduction to the administration, scoring, and interpretation of the currently used devices; major emphasis is put on theory, methodological considerations, and published studies of reliability and validity. (3 cred.; grad.; prereq. 144-145 and cons. of instr.; IV MTWThF; 115Psy) E. Rosen.

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

ROMANCE LANGUAGES

First Term

FRENCH

1. **Beginning French.** (5 cred.; all; no prereq.; III-IV MTWThF; 202F) Ar.
2. **Beginning French.** (5 cred.; all; prereq. 1 or one year of high school French; I-II MTWThF; 202F) Ar.
- 3-4. **Intermediate French.** (Students receive cred. either for 3 or for 4) (5 cred.; all; prereq. 2 or 3 or two or three years of high school French; I-II MTWThF; 201F) Ar.
22. **Practical French Conversation.** (Offered only in French Institute. See pages 54) The primary purpose of this course is to build a practical vocabulary and to give the students an opportunity to use it appropriately in small drill sections under the guidance of native instructors. (5 cred.; prereq. 1-2 or equiv.) Staff
54. **French Conversation.** Equiv. to 54w. (2 cred.; jr., sr.; prereq. 4; IV TWThF; 103F) Desgranges
58. **Advanced Practical French Conversation.** (Offered only in French Institute. See page 54.) In this course, the students will acquire fluency by presenting short oral reports and participating in debates, etc. They will be divided into small groups under the guidance of native instructors. (5 cred.; prereq. 3-4 or equiv.) Staff
62. **Practical French Phonetics.** A scientific but simple and practical study of French pronunciation with special emphasis on correcting the pronunciation and intonation of individual students. Oral exercises and ear training. Meets four times weekly with two additional hours of laboratory under the instructor's guidance. Use of phonograph recordings and sound mirror. (3 cred.; jr., sr.; prereq. 4; I TWThF; lab. ar.; 203F) Sullivan
100. **Advanced Practical French Phonetics.** (3 cred.; jr., sr., grad.; prereq. 62 or equiv.; II TWThF; 203F) Sullivan
108. **Cours de Style.** (Offered only in French Institute. See page 54) Students in this group will be required to make oral and written reports on assigned topics which will be discussed and criticized from the point of view of style and effectiveness. (4 cred.; prereq. cons. of instr.) Staff
- 117.* **Seventeenth-Century French Literature: Boileau, La Fontaine, La Bruyère.** Equiv. to 117s. (2 cred.; jr., sr., grad.; prereq. Survey of French Lit. or equiv.; IV TWThF; 302F) Fermaud
- 156.* **Balzac and the Beginnings of Realism.** Equiv. to 156s. (2 cred.; jr., sr., grad.; prereq. Survey of French Lit. or equiv.; III TWThF; 302F) Desgranges
- 159.* **Contemporary French Novel II. St.-Exupéry, Sartre, Camus.** (Course conducted in French) Equiv. to 159w. (2 cred.; jr., sr., grad.; prereq. Survey of French Lit. or equiv.; II TWThF; 307F) Fermaud

SPANISH

1. **Beginning Spanish.** (5 cred.; all; no prereq.; I-II MTWThF; 3F) Ar.
2. **Beginning Spanish.** (5 cred.; all; prereq. 1 or one year of high school Spanish; I-II MTWThF; 5F) Ar.
- 3-4. **Intermediate Spanish.** (Students receive cred. either for 3 or for 4) (5 cred.; all; prereq. 2 or 3 or two or three years of high school Spanish; III-IV MTWThF; 201F) Ar.
22. **Practical Spanish Conversation.** (Offered only in Spanish-American Institute. See page 54.) This course is intended for students who understand Spanish fairly well but who need assurance in self-expression and a basic active vocabulary. Students divided into small groups will devote all their time to practical conversation under the guidance of native instructors. (5 cred.; all; prereq. 1 and 2 or equiv.; MTWThF) Staff

54. **Spanish Conversation.** Equiv. to 54w. (2 cred.; jr., sr.; prereq. 3-4 or equiv.; I TWThF; 205F) Le Fort
58. **Advanced Practical Spanish Conversation.** (Offered only in Spanish-American Institute. See page 54.) This course is intended primarily to develop self-confidence in expressing ideas in Spanish. The students will be divided into small groups for conversation on assigned topics, informal debates and oral reports on current events, political and economic life, and development in Latin America and Spain. (5 cred.; all; prereq. 3 and 4 or equiv.; MTWThF) Staff
73. **Latin-American Culture.** (Course conducted in Spanish) (2 cred.; jr., sr.; prereq. 4 or equiv.; IV TWThF; 226F) Cúneo
83. **La Novela Hispano-Americana y los Problemas Sociales.** (2 cred.; jr., sr.; prereq. 20 or 53 or cons. of instr.; III TWThF; 226F) Cúneo
108. **Estilo.** (Offered only in Spanish-American Institute. See page 54) The purpose of this course is to study the essential characteristics of Spanish style and to enable advanced students and especially teachers of Spanish to acquire a finer feeling for the language, a sense for shades of expression, and a complete mastery of certain grammatical and idiomatic difficulties. Model selections of prose will form the basis for imitative composition. Oral and written reports on assigned topics will be required. These reports will be discussed and criticized from the point of view of style and effectiveness. (4 cred.; jr., sr., grad.; prereq. cons. of instr.; MTWThF) Cúneo
- 116.* **Seventeenth-Century Spanish Literature: Prose.** Equiv. to 116w. (2 cred.; jr., sr., grad.; prereq. Survey of Spanish Lit. or equiv.; IV TWThF; 307F) Grismer
- 120.* **Spanish Literature: The Ballad.** Equiv. to 120f. (2 cred.; jr., sr., grad.; prereq. Survey of the Lit. of Spain or equiv.; III TWThF; 307F) Grismer
- 140.* **Contemporary Latin-American Literature: The Novel.** Equiv. to 140f. (2 cred.; jr., sr., grad.; prereq. Survey of the Lit. of Spain or Latin America or equiv.; II TWThF; 208F) Le Fort

Note—See page 54 for Modern Language Institute.

Second Term

FRENCH

2. **Beginning French.** (See first term) (5 cred.; I-II MTWThF; 201F) Brackney
- 3-4. **Intermediate French.** (See first term) (5 cred.; III-IV MTWThF; 202F) Clefton
55. **Practical French Conversation.** Equiv. to 55s. (2 cred.; jr., sr.; prereq. 3-4 or equiv.; IV TWThF; 302F) Brackney
- 130.* **Nineteenth-Century Poetry: Hugo.** (2 cred.; jr., sr., grad.; prereq. Survey of French Lit. or equiv.; II TWThF; 203F) Clefton

SPANISH

2. **Beginning Spanish.** (See first term) (5 cred.; I-II MTWThF; 202F) Ar.
- 3-4. **Intermediate Spanish.** (See first term) (5 cred.; III-IV MTWThF; 201F) Ar.
- 176.* **Contemporary Spanish Poetry.** Equiv. to 176s. (2 cred.; jr., sr., grad.; prereq. Survey of Spanish Lit. or equiv.; III TWThF; 203F) Pattison
- 250.* **Nineteenth-Century Spanish Seminar: Galdos.** (2 cred.; grad.; IV TWThF; 203F) Pattison

RUSSIAN

See Linguistics and Comparative Philology, page 37.

SOCIAL SCIENCE

See General Studies, pages 29 and 31.

SOCIOLOGY AND SOCIAL WORK

First Term

SOCIOLOGY

1. **Introduction to Sociology.** A study of the characteristics of human group life. An analysis of the factors associated with the development of human group life and man's social environment; the structure of the social environment and its influence upon the individual's behavior; the processes involved in social change and the social problems that accompany social change. A survey of the fundamental social institutions such as the family and the church; the development and decline of social institutions; change in the institutional functions and social disorganization. (3 cred.; all; no prereq.)
 Sec. 1, I MTWThF, 100NH, Buell Sec. 3, III MTWThF, 102NH, Stryker
 Sec. 2, II MTWThF, 100NH, Mouratides
2. **Intermediate Sociology.** A sociological analysis of modern American society. Topics emphasized include the distribution of population, urban-rural differences, social factors in the business system, occupational groups, the determination of social status, and minority group adjustment. An attempt is made to familiarize the student with current research methods. (3 cred.; prereq. 1; I MTWThF; 107NH) Bowling
49. **Social Problems.** A survey course in contemporary social problems with especial emphasis on personal demoralization and social disorganization. (3 cred.; prereq. 1; III MTWThF; 107NH) Prell
91. **Case Method Applied to the Study of Human Problems.** The general application of the interviewing method for students who plan to work professionally in fields involving human relationships, such as social work, public health nursing, speech pathology, etc. (3 cred.; jr., sr.; prereq. 50 or 51 or cons. of major adviser; IV MTWThF; 107NH) Pruitt
111. **Population Trends.** This course emphasizes the cultural and social phases of population change with particular reference to birth rates, death rates, and migration. The implications of population change are also discussed. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., c.w., ed., philos., or psych. or cons. of instr.; II MTWThF; 106NH) Marshall
- Soc.Sci.111. Cultural Relations: Instrument of Peace or War?** Investigation of fundamental factors underlying international relations, the effect of different national cultures and especially ideologies upon the problems of peace and war. (3 cred.; jr., sr., grad.; prereq. 6 cred. in soc. sci.; IV MTWThF; NHAud) Levi (coordinator), Edwards, Kohn, Mander, Spencer, Wirth
118. **The City: An Introduction to Urban Civilization.** The rise of urban civilization and metropolitan regions; human relations and personality; social structure and social problems; control and planning. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., c.w., ed., philos., or psych., or cons. of instr., not open to students who have taken Soc. 7w,s; II MTWThF; 107NH) Wirth
120. **Social Psychology.** An examination of the varying points of view toward the relation of the individual and society. Analysis of kinds of social influences on the individual, and their role in his social development. Varying patterns of behavior under different kinds of group organization. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., c.w., ed., philos., or psych. or cons. of instr.; III MTWThF; 106NH) Rose
123. **Interaction of Racial and Cultural Groups in America.** Processes leading to group contact; characteristics and contributions of ethnic groups in the United States; mechanisms and problems of group adjustment. Democratic theory and practice; sources of prejudice; contemporary status of principal minority groups; international implications; trends and proposed solutions. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., c.w., ed., philos., or psych., or cons. of instr.; I MTWThF; 106NH) Rose

162. **Rural Social Institutions.** Factors in the rural environment which condition the functioning of rural social institutions, including the family, school, church, local government, health, and welfare. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., c.w., ed., philos., or psych. or cons. of instr.; IV MTWThF; 106NH) Marshall
- 240.* **Seminar in Sociology.** (2 cred.; ar.) Staff

SOCIAL WORK

- C.W.140. **Behavior Problems in Younger Children.** See page 127.
- 213.†‡ **Field Work.** Field practice in social work process under direct supervision. (3-6 cred.; grad.§) Pruitt
260. **The Child and the State.** Development of the rights of the child in relation to parental rights as evidence in child labor laws, the juvenile courts, adoption, aid to dependent children, the changing status of the illegitimate child, and public organization for more effective administration of laws relating to child dependency, delinquency, and neglect. (3 cred.; grad.; II MTWThF; 103NH) Guilford
- 293.* **Special Studies in Social Work.** (1-9 cred.; grad.§) Guilford
- 300.* **General Seminar in Social Work.** (2-3 cred.; grad.; ar.) Guilford, Pruitt

Second Term

SOCIOLOGY

1. **Introduction to Sociology.** (See first term) (3 cred.)
 Sec. 1, I MTWThF, 100NH, Mouratides Sec. 3, III MTWThF, 100NH, Cleland
 Sec. 2, II MTWThF, 100NH, Buell
2. **Intermediate Sociology.** (See first term) (3 cred.)
 Sec. 1, I MTWThF, 107NH, Bowing Sec. 2, II MTWThF, 102NH, Stryker
14. **Rural Sociology.** A presentation of factual data necessary to an understanding of the problems of rural social life. (3 cred.; prereq. 1; II MTWThF; 107NH) Cleland
101. **Criminological Theories.** A consideration and an evaluation of the major historical and contemporary theories of criminal behavior. (3 cred.; jr., sr., grad.; prereq. 1, 53 and 15 cred. in soc. sci., c.w., ed., philos. or psych. or cons. of instr.; III MTWThF; 107NH) Quackenbush
112. **Population Policy.** A study of population policy, both historical and present-day, in Europe, Asia, and other selected areas but with special emphasis on the United States. Some discussion is given to the field of population and power politics. (3 cred.; sr., grad.; cons. of instr.; II MTWThF; 106NH) Marshall
141. **The Family.** The evolution of the family; development of family unity or disunity, the roles of the several members of the family, methods of investigation of the family. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., c.w., ed., philos. or psych. or cons. of instr.; IV MTWThF; 107NH) Quackenbush
173. **Cultural Change in American Civilization.** A qualitative and quantitative analysis in terms of objectively measurable aspects of culture, in the perspective of established principles and facts relating to cultural change in western civilization as a whole and to the general evolution of culture. (3 cred.; jr., sr., grad.; prereq. 1 and 15 cred. in soc. sci., c.w., ed., philos. or psych. or cons. of instr.; I MTWThF; 106NH) Hart
174. **Social Implications of the Atomic Age.** A study of the cultural lag between atomic-age physical, chemical, and biological science, and the techniques of social control, with an analysis of actual and possible applications of social

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

‡ Admission on consultation with a social work adviser.

- 71.†† **Play Production: Problems of Dramatic Production in the Secondary School.** Primarily for students in the College of Education. (3 cred.; jr., sr.; prereq. 1-2, 31, 32; III MTWThF; 3rd floor NH) Graham
- 81.‡ **Interpretative Reading.** Esthetic theory of literature and of oral reading. Practice in reading for interpretation and mastery of technique. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; 1 MTWThF; 308F) Thompson
103. **Argumentation and Persuasion.** Theories of modern motivational rhetoric. Analysis of persuasive speaking; practice in preparation and delivery of oral argument. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, Psy. 1-2, 10 cred. in soc. sci.; VII MTWThF; 306F) Howell
106. **Discussion.** Cooperative thinking; recognition and definition of problems, critical analysis, examination of possible solutions. Planning, preparing for, participating in, and leading classroom, public, and radio discussions. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6; III MTWThF; 305F) Howell
122. **Introduction to Research.** Graduate research in speech: selections of topics and methods of investigation. Required of all graduate majors in speech. (3 cred.; sr., grad.; prereq. 1-2-3 or 5-6, Psy. 1-2; IV MTWThF; 308F) Gilkinson
126. **History and Criticism of Public Address.** An examination of historical and critical studies of oratory. The study of orators: education and training, style, speech composition, topics and issues, historical settings. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, Psy. 1-2; II MTWThF; 308F) Gilkinson
- 131.‡ **Creative Dramatics.** Studies in the principles and methods of developing original dramatizations with children. Observation of children's classes in creative dramatics. Readings, projects, term papers. (3 cred.; sr., grad.; prereq. 31 or cons. of instr., Ed.C.I. 63 recommended; IV MTWThF; 3rd floor NH) Graham
- Mu.144.‡ **Opera Production (lecture).** A course designed to acquaint the student with (1) the history of opera (2) the various theater techniques essential to stage production (3) the use and values of opera in the high school and college curriculum (4) the value of opera experience to the vocalist, actor, and instrumentalist in the over-all development of the personality. (3 cred.; jr., sr., grad.; prereq. 9 cred in music, mu. ed., or speech; VI MTWThF; 2,3,4ScH) Aliferis, Whiting, and staff
- Mu.145.‡ **Opera Production (laboratory).** Exercise and practice in the organizing and conducting of vocal, instrumental, and acting groups involved in the production of opera, plus practical training in such technical skills as lighting, costuming, makeup, and scenic design. Each student must participate in one of the musical productions of the University Theatre. (3 cred.; jr., sr., grad.; prereq. 9 cred. in music, mu. ed., or speech; VII-VIII MTWThF; 2,3,4ScH) Aliferis, Whiting, and staff
152. **Problems of Hearing.** A study of the hearing mechanism and its function, techniques of determining hearing acuity and electronic aids to hearing. (3 cred.; prereq. 1-2-3 or 5-6, 61, 67, Psy. 1-2 or cons. of instr.; IV MTWThF; 306F) Lassman
- 163.§†† **Speech Pathology.** Physiologic and psychologic aspects of organic and functional speech problems. Articulatory disorders. Diagnoses and treatment. Clinical observation. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, 61, 67, 85; III MTWThF; 306F) Bryngelson
- 164-165-166.§ **Clinical Methods in Speech Pathology.** (3 cred.; sr., grad.; prereq. 1-2-3 or 5-6, and 61, 67, 162-163, Ed.Psy. 142, consult instr.; ar.; ar.) Bryngelson

† Students taking 71-72-73 may not receive credit for 34, 91-92-93, 111-112-113.

§ To receive credit for this course, students must complete both 162 and 163.

¶ See also Ed.C.I. 174-175-176. Students may register for only one of these sequences.

†† Students intending to take Speech Pathology should take Phonetics the preceding winter.

173. **History of the Theater.** A study of the arts and crafts of the theater from the beginnings to the present. Special reports and projects. (3 cred.; sr., grad.; prereq. 1-2-3 or 5-6, 31; II MTWThF; Theater Seminar, ScH) Thompson
181. **Readings in Speech.** Directed readings and the preparation of reports on selected subjects. (Cred. ar.; jr., sr., grad.; prereq. 1-2-3 or 5-6 and 6 add. cred. and cons. of instr.; ar.; ar.) Staff
291. **Research in Special Problems.** (Cred. ar.; ar.) Staff

Second Term

The facilities of the University Speech and Hearing Clinic are available to students desiring a personal speech or hearing analysis or wanting help with their speech or hearing problems. Interested students are invited to confer with the assistant director of the Speech and Hearing Clinic (Office of the Dean of Students), Room 20, Shevlin Hall.

- 1.†‡ **Fundamentals of Speech.** (See first term) (3 cred.) Ar.
 Sec. 1, II MTWThF, 2F Sec. 2, IV MTWThF, 207F
- 2-3.‡ **Fundamentals of Speech** (Continuation of Course 1) Ar.
 Sec. 1, I MTWThF, 206F Sec. 2, III MTWThF, 107F
- 33.‡ **Beginning Acting.** (See 32, first term) (3 cred.; II MTWThF; 3rd floor NH) Corson
65. **Radio Speech.** Speech and psychology of the radio. Projects, and reports on problems of appeal and audience response. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; VI MTWThF; 302MurH) Ziebarth
- 67.†† **Phonetics.** The study of English speech sounds as they occur separately and in connected speech. Strong and weak forms, stress, assimilation. Practice in ear training. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6, 65 recommended; II MTWThF; 306F) Irwin
- 81.‡ **Interpretative Reading.** (See first term) (3 cred.; III MTWThF; 3rd floor NH) Graham
- 91.†¶ **Stage Design.** Theory and practice of designing scenery as a functional environment for the stage play. (3 cred.; jr., sr.; prereq. 31; III MTWThF; 3rd floor NH) Corson
106. **Discussion.** (See first term) (3 cred.; III MTWThF; 306F) Smith
- 111.†¶¶ **Stage Direction.** Theory and practice in conducting rehearsals with special emphasis on the one-act play. (3 cred.; sr., grad.; prereq. 31, 32-33, 34, 91-92-93; II MTWThF; 19ScH) Whiting
- 131.‡ **Creative Dramatics.** (See first term) (IV MTWThF; 211NH) Ward
- 132.‡ **Children's Theater.** Studies in the theory and practice of selection, direction, and production of plays for children's audiences, coordinated with current productions of the Young People's University Theatre. (3 cred.; jr., sr., grad.; prereq. 31 or cons. of instr.; VI MTWThF; 211NH) Ward
141. **Anatomy and Physiology of the Voice Mechanism.** Consideration of respiration, articulation, and phonation; practical applications to speech improvement. (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6; I MTWThF; 306F) Irwin
181. **Readings in Speech.** (See first term) (Cred. ar.; ar.) Staff
241. **Seminar in Radio Research.** Analysis and evaluation of research methods in mass communication by radio. An examination of the research literature. (2 cred.; jr., sr., grad.; ar.; ar.) Ziebarth
- 291-292. **Research in Special Problems.** (Cred. ar.; ar.) Staff

See also Ed.C.I.140, The Teaching of Speech, page 107.

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

¶ Students taking 71-72-73 may not receive credit for 34, 91-92-93, 111-112-113.

†† Students intending to take speech pathology should take phonetics the preceding quarter.

ZOOLOGY

First Term

- 1.† **General Zoology.** Structure, physiology, embryology, classification, and evolution of animals. (5 cred.; all; no prereq.; lect. V MTWTh, V-VI F, 06Bo; lab. VI-VIII MTWTh, 101, 107Z) Olson
- 21.† **Histology.** Microscopic structure of the tissues and organs. (5 cred.; soph., jr., sr.; prereq. Zool. 1-2-3 or equiv.; lect. I MTWTh, I-II F, 211Z; lab. II-IV MTWTh, 201Z) Olson
- 51.† **Introductory Animal Parasitology.** An elementary course dealing with parasitic protozoa, worms, and arthropods, and their relation to diseases of man and animals. (5 cred.; jr., sr.; prereq. Zool. 1-2-3 or equiv.; lect. VI MTWTh, VI-VII F, 211Z; lab. VII-IX MTWTh, 208Z) Wallace
- 197.* **Problems.** Advanced work in some special line. (3 cred. or more; jr., sr., grad.; prereq. Zool. 1-2-3 and special requirements; ar.) Ar.

Second Term

- 2.† **General Zoology.** (Continuation of 1) (5 cred.; all; prereq. 1 or equiv.; lect. V MTWTh, V-VI F, 06Bo; lab. VI-VIII MTWTh, 101,107Z) Merrell
83. **Introduction to Genetics and Eugenics.** Facts and theories of heredity with special reference to man; chances of man to inherit traits; possible benefits of control by man for the betterment of himself and society. (3 cred.; jr., sr.; prereq. 1-2-3 or 10 cred. in bot.; II MTWThF; 06Bo) Merrell
- 198.* **Problems.** (See 197, first term) (3 cred. or more; ar.) Ar.

For additional courses see Itasca Biological Station, page 75.

MODERN LANGUAGE INSTITUTES

First Term

In a world only 60 hours large all must learn to understand other peoples and their cultures. The Summer Session of the University of Minnesota has long recognized this fact and has aided in its implementation by the establishment of the Spanish-American Institute in 1942. The 1950 Summer Session has expanded its program to include a German and a French Institute. The three Institutes have two main purposes:

- (a) To teach the active use of the respective language; and
- (b) To interpret the culture of the language area.

The Modern Language Institutes are designed to meet the needs of three groups of students: (1) those who have completed 2 quarters of the language to be studied, (2) those who have had 4 quarters, and (3) advanced undergraduate and graduate students with a good working knowledge of the language. Students in Group I will receive 10 credits, those in Group II and Group III, 9 credits.

The courses offered in the Modern Language Institute are listed under the departments of German and Romance Languages as follows: German: 22, 66, 107; French: 22, 58, 108; Spanish: 22, 58, 108. Students in Group I will register for 22 (5 cred.) and for 3-4 (5 cred.) given on the Minneapolis Campus. Students in Group II will register for 58, or in the case of German, 66 (5 cred.) and for electives offered on the Minneapolis Campus not to exceed 4 credits. Students in Group III will register for 108, or in the case of German, 107 (4 cred.) and may elect courses on the Minneapolis Campus not to exceed 5 credits.

In connection with the work of the institutes there will be a course taught in the College of Education, Ed.C.I. 188, Advanced Course in the Teaching of Modern

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

Languages, 3 credits. This course will be open to all teachers and prospective teachers of foreign languages who have advanced standing. For description of this course, see page 106.

Classes will be conducted in the native language. In all courses the aural-oral method will be used. Students will practice pronunciation every day with native teachers and by means of phonograph records and tape recorders. Movies will be used to teach the languages and to depict the life of each language area. A language clinic will be conducted in each institute for those students who need special assistance.

Acceptance in any Modern Language Institute implies a promise to use the foreign language 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 regular classes there will be evening round table discussions on aspects of contemporary life and culture and social programs including picnics, group singing, plays, dances, and films.

Every Thursday night there will be an open house in which all three language institutes will participate. In these programs the members of the institutes will present various aspects of the cultural life of each of the three language areas, as represented by their music, dances, songs, plays, and customs. Friends of the Institutes and other interested persons are always welcome. These programs are conducted in English.

All activities of the Institutes will be centered in three houses, the *Casa Hispanica*, the *Deutsches Haus*, and the *Maison Francaise*, all located along "Language Row" on the Minneapolis Campus. Students registered at the Institutes will be required to live in one of these houses, according to the language they are to study. For students living in the Twin Cities area, residence in the houses is not compulsory, but meals must be taken there and attendance at all activities is mandatory.

The Institutes should prove invaluable to teachers of Spanish, German, and French whether or not they are working for graduate degrees; to students from other schools who wish to satisfy their language requirements during the Summer Session; to those planning to apply for Fulbright or SPAN scholarships, or other foreign study groups; and to men and women preparing to teach or training for positions with the government, international organizations, or private business.

The cost, exclusive of board and room, will be \$46.50 for tuition, incidental fee, and deposit, plus \$40 laboratory fee, making a total of \$86.50. Board and room in any house costs \$85 for the six-week term. Cost of board only varies with the number of meals taken, but will average approximately \$28. This amount includes five luncheons and one dinner weekly plus daily afternoon snacks.

Applications and requests for further information should be mailed on or before June 3, 1950 to:

Dean of the Summer Session
536 Administration Building
University of Minnesota,
Minneapolis 14.

INSTITUTE OF TECHNOLOGY

School of Architecture§

A double dagger (‡) indicates courses for which course fees are charged. See Course Fees, pages 14-17.

DESIGN

Major and consulting critics: McClure, Heath, Nagle.

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.

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.

First Term

AD-II.‡ Architectural Design, Grade II. (Page 94) (3 cred.; prereq. AD-I; ar.) Ar.

AD-III.‡ Architectural Design, Grade III. (Page 94) (4½ cred.; prereq. AD-II; ar.) Ar.

AD-IV.‡ Architectural Thesis. (Page 94) (6 cred.; prereq. AD-III; ar.) Ar.

Second Term

AD-II.‡ Architectural Design, Grade II. (See first term)

AD-III.‡ Architectural Design, Grade III. (See first term)

AD-IV.‡ Architectural Thesis. (See first term)

College of Engineering§

An asterisk (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See pages 18-19.)

A double dagger (‡) indicates courses for which course fees are charged. See Course Fees, pages 14-17.

§ The page number in parentheses after the course title indicates the page in the *Bulletin of the Institute of Technology* on which course description is given.

AERONAUTICAL ENGINEERING‡*First Term*

83. **Stresses in Simple Structures, Part I.** (Page 85) (2 cred.; prereq. M&M. 128; lect. I MWF, 211AE; lab. II-III F, 209AE) Harris
101. **Aerodynamics, Part I.** (Page 85) (1½ cred.; prereq. 100; I MWF; 227AE) Cronk
106. **Advanced Aerodynamics, Part I.** (Page 85) (1½ cred.; prereq. 102; I MWF; 309AE) Stolarik
115. **Airplane Stresses, Part I.** (Page 86) (1½ cred.; prereq. 83; lect. II TTh, 211AE; lab. II-III W, 215AE) Harris
120. **Airplane Design, Part I.** (Page 86) (1 cred.; prereq. 83, 102; IV TTh; 227AE) Harris
122. **Airplane Design, Part I.** (Page 86) (1 cred.; prereq. 121; I TTh; 227AE) Harris
130. **Aerodynamic Design Laboratory, Part I.** (Page 86) (1 cred.; prereq. reg. in 120; II-IV MF; 215AE) Stolarik
132. **Airplane Design Laboratory, Part I.** (Page 86) (1 cred.; prereq. reg. in 122; II-IV TTh; 215AE) Stolarik
135. **Airplane Static Testing, Part I.** (Page 86) (1 cred.; prereq. 142; lect. III T, 211AE; lab. II-IV M, 21AE) Harris
155. **Aeronautical Calculations, Part I.** (Page 87) (1 cred.; sr., grad.; VI TTh; 211AE) Cronk
190. **Seminar, Part I.** (Page 87) (½ cred.; prereq. 101; III W; 211AE) Stolarik
191. **Seminar, Part I.** (Page 87) (½ cred.; prereq. 190; II W; 211AE) Stolarik
- 193-194-195. **Advanced Problems in Aeronautical Engineering, Part I.** (Page 87) (1 to 2½ cred.; sr. or grad. in AE; ar.) Cronk
- 272-273-274. **Research in Aeronautical Engineering, Part I.** (Page 88) (1 to 2½ cred.; prereq. cons. of instr.; ar.) Wise, Cronk

Second Term

83. **Stresses in Simple Structures, Part II.** (See 83, first term)
101. **Aerodynamics, Part II.** (See 101, first term)
106. **Advanced Aerodynamics, Part II.** (See 106, first term)
115. **Airplane Stresses, Part II.** (See 115, first term)
120. **Airplane Design, Part II.** (See 120, first term)
122. **Airplane Design, Part II.** (See 122, first term)
130. **Aerodynamic Design Laboratory, Part II.** (See 130, first term)
132. **Airplane Design Laboratory, Part II.** (See 132, first term)
135. **Airplane Static Testing, Part II.** (See 135, first term)
155. **Aeronautical Calculations, Part II.** (See 155, first term)
190. **Seminar, Part II.** (See 190, first term)
191. **Seminar, Part II.** (See 191, first term)
- 193-194-195. **Advanced Problems in Aeronautical Engineering, Part II.** (See 193-194-195, first term)
- 272-273-274. **Research in Aeronautical Engineering, Part II.** (See 272-273-274, first term)

CIVIL ENGINEERING*First Term*

- 23.‡ **Summer Camp.** (Page 105) (9 cred.; prereq. 16, 22) Ar.
- 31-32a. **Stresses in Structures.** (Page 106) (4½ cred.; prereq. M&M. 26, 128) Andersen
- Lect. I-II MTWTh, II F, 110Ex Lab. 1, VII-IX MWF, 225E
2, VII-IX TThF, 229E

- 52.‡ Highways and Pavements.** (Page 107) (3 cred.; prereq. 51) Thomas
Lect. VI MTWTh, 110Ex Lab. 1, VII-IX MW, 210Ex
2, VII-IX TTh, 210Ex
- 121. Railway Engineering.** (Page 105) (3 cred.; prereq. 22, M.&M. 127; lect. VI MW, 104E; lab. VII-IX MTWTh, 217E) Johnson

Second Term

- 23.‡ Summer Camp.** (See first term)
- 32b-33. Design in Steel and Timber.** (Page 106) (4½ cred.; prereq. 31-32a) Andersen
Lect. I-II MTWTh, II F, 110Ex Lab. 1, VII-IX MWF, 225E
2, VII-IX TThF, 229E
- 53.‡ Elements of Soil Mechanics.** (Page 107) (3 cred.; prereq. 52) Kersten
Lect. VI MTWTh, 110Ex Lab. 1, VII-IX MW, OSL
2, VII-IX TTh, OSL

DRAWING AND DESCRIPTIVE GEOMETRY

First Term

- 2. Engineering Drawing.** (Page 111) (3 cred.; prereq. 1; VI-VIII MWThF, VI-IX T; 18E) Quaid
- 3. Descriptive Geometry.** (Page 111) (3 cred.; prereq. 2, M.&M. 11; VI-VIII MWThF, VI-IX T; 201E) Palmer
- 7. Engineering Drawing.** (Page 111) (3 cred.; prereq. solid geom.; VI-VIII MWThF, VI-IX T; 18E) Quaid
- 10. Solid Geometry.** (Page 112) (No cred.; prereq. plane geom.; VI MTWThF; 215E) Palmer
- 22. Structural Detailing.** (Page 112) (2 cred.; prereq. 21; VI-VIII MTWTh; 101E) Myers
- 28. Drafting.** (Page 112) (2 cred.; prereq. 3; VI-VIII MTWTh; 101E) Myers
- 34. Lettering.** (Page 112) (1 cred.; prereq. 1; V MW; 227E) Myers

Second Term

- 1. Engineering Drawing.** (Page 111) (3 cred.; prereq. solid geom.; VI-VIII MWThF, VI-IX T; 18E) Bullen
- 3. Descriptive Geometry.** (See first term) Eggers
- 8. Engineering Drawing.** (Page 112) (3 cred.; prereq. 7; VI-VIII MWThF, VI-IX T; 18E) Bullen
- 21. Drafting.** (Page 112) (2 cred.; prereq. 3; VI-VIII MTWTh; 101E) Springer
- 23. Structural Detailing.** (Page 112) (2 cred.; prereq. 22; VI-VIII MTWTh; 101E) Springer
- 34. Lettering.** (See first term) Springer

ELECTRICAL ENGINEERING

First Term

- 36 or 43. Electrical Engineering Survey.** (Page 118) (3 cred.; sr. M.E., or sr. Chem.E.; prereq. Phys. 9) Pidcock
Lect. IV MTWTh, 335EE Lab. 1, I-IV F, 207bEE
2, VI-IX T, 207bEE
- 37 or 44. Electrical Engineering Survey.** (Page 118) (3 cred.; prereq. 36 or 43) Cartwright, Slothower
Lect. III MWThF, 335EE Lab. 1, I-IV T, 207aEE
2, VI-IX Th, 207aEE

- 38 or 45. **Electrical Engineering Survey.** (Page 118) (3 cred.; prereq. 37 or 44) Brown, Hartman, Pidcock
 Lect. II MTThF, 335EE Lab. 2, VI-IX M, 207cEE
 Lab. 1, I-IV W, 207cEE 3, VI-IX W, 207cEE
113. **Junior Electrical Engineering.** (Page 118) (3 cred.; prereq. 111, 112; III MTWThF; 138EE) Hartman
- 114.‡ **Junior Electrical Engineering Laboratory.** (Page 118) (1 cred.; prereq. reg. or cred. in 113; VI-IX M; 107bEE) Hartman
115. **Junior Electrical Engineering.** (Page 118) (3 cred.; prereq. 113, 114; II MTWThF; 138EE) Slothower
- 116.‡ **Junior Electrical Engineering Laboratory.** (Page 118) (1 cred.; prereq. reg. or cred. in 115) Liu
 Lab. 1, VI-IX T, 107bEE Lab. 2, VI-IX W, 107bEE
123. **Senior Electrical Engineering.** (Page 118) (3 cred.; prereq. 121) Caverly, Angland
 Lect. 1, IV MTWThF, 237EE Lect. 2, IV MTWThF, 238EE
- 124.‡ **Senior Electrical Engineering Laboratory.** (Page 118) (2 cred.; prereq. reg. or cred. in 123) Becklund, Olson
 Lab. 1, VI-IX M, 107aEE Lab. 3, VI-IX Th, 107aEE
 2, VI-IX T, 107aEE 4, VI-IX F, 107aEE
125. **Senior Electrical Engineering.** (Page 118) (3 cred.; prereq. 123) Cartwright, Liu
 Lect. 1, I MTWThF, 237EE Lect. 2, I MTWThF, 238EE
- 126.‡ **Senior Electrical Engineering Laboratory.** (Page 118) (2 cred.; prereq. 124, cred. or reg. in 125) Angland, Cartwright, Liu
 Lab. 1, VI-IX M, 107aEE Lab. 3, VI-IX W, 107aEE
 2, VI-IX T, 107aEE 4, VI-IX Th, 107aEE
- 128.‡ **Transient Electrical Phenomena.** (Page 118) (3 cred.; prereq. 127) Barnes, Brown
 Lect. III MTWThF, 237EE Lab. 2, I-II WF, 129EE
 Lab. 1, I-II TTh, 129EE 3, VI-VII MW, 129EE
 4, VI-VII TTh, 129EE
- 129.‡ **Transient Electrical Phenomena.** (Page 118) (3 cred.; prereq. 128) Barnes, Brown, Gannett
 Lect. 1, II MTWThF, 237EE Lab. 1, III-IV MW, 9EE
 2, II MTWThF, 238EE 2, III-IV TTh, 9EE
 3, VI-VII TTh, 9EE
- 163,167. **Electric Communication Circuits, Part I.** (Pages 119 and 120) (6 cred.; prereq. 161-162) Gannett
 Lect. I MTWF, 138EE Lab. 1, I-III Th, 312EE
 2, VI-VIII W, 312EE
- 168,169. **Electric Communication Circuits, Part I.** (Page 120) (6 cred.; prereq. 163,167) Becklund
 Lect. IV TWThF, 138EE Lab. 1, II-IV M, 308EE
 2, VI-VIII F, 308EE

Second Term

- 36 or 43. **Electrical Engineering Survey.** (See first term) Liu
- 37 or 44. **Electrical Engineering Survey.** (See first term) Hartman, Liu, Roehl
- 38 or 45. **Electrical Engineering Survey.** (See first term) Hartman, Roehl
117. **Engineering Electronics.** (Page 118) (3 cred.; prereq. 111, 112; III MTWThF; 138EE) Muckenhirn
- 118.‡ **Engineering Electronics Laboratory.** (Page 118) (1 cred.; prereq. reg. or cred. in 117; VI-IX M; 227EE) Gannett

- 119. Engineering Electronics.** (Page 118) (3 cred.; prereq. 117; II MTWThF; 138EE) Muckenhirn
- 120.† Engineering Electronics Laboratory.** (Page 118) (1 cred.; prereq. reg. or cred. in 119) Becklund
 Lab. 1, VI-IX T, 227EE Lab. 2, VI-IX W, 227EE
- 133. Electronic Circuit Design.** (Page 119) (3 cred.; prereq. 131) Anderson
 Lect. III MTThF, 237EE Lab. 1, I-IV W, 36EE
 2, VI-IX M, 36EE
- 134. Electrical Design.** (Page 119) (3 cred.; prereq. 132; III MTWThF; 238EE) Fillmore
- 135. Electronic Circuit Design.** (Page 119) (3 cred.; prereq. 133) Anderson, Gannett
 Lect. II MTWTh, 237EE Lab. 2, VI-IX T, 36EE
 Lab. 1, I-IV F, 36EE 3, VI-IX Th, 36EE
- 136. Electrical Design.** (Page 119) (3 cred.; prereq. 134; IV MTWThF; 237EE) Fillmore
- 139. Power Systems.** (Page 119) (3 cred.; prereq. 138; IV MTWThF; 238EE) Cartwright
- 140. Power Systems.** (Page 119) (3 cred.; prereq. 139; II MTWThF; 238EE) Cartwright
- 158. Industrial Electronics.** (Page 119) (3 cred.; prereq. 157) Gannett, Larson
 Lect. IV MTThF, 202ME Lab. 1, I-IV W, 35EE
 2, VI-IX M, 35EE
- 159. Industrial Electronics.** (Page 119) (3 cred.; prereq. 158) Larson
 Lect. I MTWTh, 238EE Lab. 2, VI-IX T, 35EE
 Lab. 1, I-IV F, 35EE 3, VI-IX Th, 35EE
- 165.‡ Communication Circuits.** (Page 119) (4 cred.; prereq. 164) Roehl
 Lect. II MTWF, 202ME Lab. 1, I-IV Th, 307EE
 2, VI-IX M, 307EE
- 166.‡ Communication Circuits.** (Page 119) (4 cred.; prereq. 165) Miller
 Lect. III TWThF, 202ME Lab. 1, I-IV M, 307EE
 2, VI-IX W, 307EE
- 163,167. Electrical Communication Circuits, Part II.** (See 163,167, first term) Hartig
- 168,169. Electrical Communication Circuits, Part II.** (See 168,169, first term)

ENGLISH (ENGINEERING)

First Term

- 6. Written and Spoken Communication.** (Page 121) (3 cred.; prereq. 5; IV MTWThF; 309AE) Haga
- 9. Technical Discussions.** (Page 122) (3 cred.; prereq. 6; III MTWThF; 309AE) Haga

Second Term

- 6. Written and Spoken Communication.** (See first term) Ar.

GENERAL ENGINEERING

First Term

- 70. The Slide Rule.** (Page 123) (1 cred.; prereq. reg. or cred. in M.&M. 11; V TTh; 227E) Myers

Second Term

- 70. The Slide Rule.** (See first term) Springer

MATHEMATICS AND MECHANICS

First Term

12. **Trigonometry.** (Page 128) (5 cred.; prereq. 11; III-IV MTWThF; 106E) Hartman
13. **Analytic Geometry.** (Page 128) (5 cred.; prereq. 12) R. R. Johnson, Leittin
Lect. 1, I-II MTWThF, 205E Lect. 2, I-II MTWThF, 106E
24. **Differential Calculus.** (Page 128) (5 cred.; prereq. 13) Kelly, Polansky
Lect. 1, I-II MTWThF, 227E Lect. 2, I-II MTWThF, 305E
25. **Integral Calculus.** (Page 128) (5 cred.; prereq. 24) James, H. G. Johnson
Lect. 1, I-II MTWThF, 206E Lect. 2, I-II MTWThF, 215E
26. **Technical Mechanics: Statics.** (Page 130) (5 cred.; prereq. 25) Alstad, Scott
Lect. 1, III-IV MTWThF, 110TSCE Lect. 2, III-IV MTWThF, 104E
80. **Elementary Differential Equations.** (Page 128) (3 cred.; prereq. 25) Warschawski, Munro
Lect. 1, III MTWThF, 305E Lect. 2, III MTWThF, 100TSCE
85. **Strength of Materials.** (Page 130) (3 cred.; prereq. 26 or 84; IV MTWThF; 305E) Doeringsfeld
86. **Fluid Mechanics.** (Page 131) (3 cred.; prereq. 26 or 84; I MTWThF; 100TSCE) Doeringsfeld
- 87.‡ **Materials Testing Laboratory.** (Page 130) (1 cred.; prereq. reg. or cred. in 85) Ito, Scott
Lab. 1, VI-VII MW, Ex Lab. 2, VI-VII TTh, Ex
127. **Technical Mechanics: Dynamics.** (Page 130) (5 cred.; prereq. 26) Loye, Johnson
Lect. 1, I-II MTWThF, 327AE Lect. 2, I-II MTWThF, 110TSCE
128. **Strength of Materials.** (Page 131) (5 cred.; prereq. 26) Ito, Stavnes
Lect. 1, III-IV MTWThF, 206E Lect. 2, III-IV MTWThF, 215E
130. **Fluid Mechanics.** (Page 131) (5 cred.; prereq. 26; III-IV MTWThF; 227E) McElrath
- 141.‡ **Materials Testing Laboratory.** (Page 131) (1 cred.; prereq. cred. or reg. in 128) Loye, Johnson, Stavnes
Lab. 1, I-II MW, Ex Lab. 2, I-II TTh, Ex
3, VIII-IX MW, Ex
- 143.‡ **Hydraulics Laboratory.** (Page 131) (1 cred.; prereq. cred. or reg. in 86, 129 or 130) McElrath, James, Johnson
Lab. 1, I-II TTh, Ex Lab. 2, VI-VII WF, Ex
3, VI-VII MTh, Ex
150. **Calculus III, Intermediate Calculus.** (Page 129) (3 cred.; prereq. 25; III MTWThF; 203E) Koehler
152. **Calculus IV, Special Topics in Advanced Calculus.** (Page 129) (3 cred.; prereq. 150; I MTWThF; 203E) Koehler
154. **Vector Analysis.** (Page 129) (3 cred.; prereq. 25; II MTWThF; 203E) Munro
168. **Elementary Theory of Complex Variables.** (Page 129) (3 cred.; prereq. 153; IV MTWThF; 203E) Warschawski

Second Term

13. **Analytic Geometry.** (See first term) (I-II MTWThF; 205E) Cray
25. **Integral Calculus.** (See first term) Braden
26. **Technical Mechanics: Statics.** (See first term) (III-IV MTWThF; 205E) Kirmser, Wald

80. **Elementary Differential Equations.** (See first term) (III MTWThF; 305E) Smith
85. **Strength of Materials.** (See first term) Smith
86. **Fluid Mechanics.** (See first term) Wilcox
- 87.‡ **Materials Testing Laboratory.** (See first term) Laws, Wald
127. **Technical Mechanics: Dynamics.** (See first term) Laws
128. **Strength of Materials.** (See first term) Fisher, Miller
130. **Fluid Mechanics.** (See first term) Johnston, Kirmser
- 141.‡ **Materials Testing Laboratory.** (See first term) Fisher, Miller
- 143.‡ **Hydraulics Laboratory.** (See first term) Johnston
152. **Calculus IV: Special Topics in Advanced Calculus.** (See first term) Thompson
153. **Calculus V: Special Topics in Advanced Calculus.** (Page 129) (3 cred.; prereq. 152; III MTWThF; 203E) Thompson
155. **Vector Analysis and Dyadics.** (Page 129) (3 cred.; prereq. 154; II MTWThF; 203E) Wilcox

MECHANICAL ENGINEERING

First Term

- 4.‡ **Machine Woodworking.** (Prebus., M.E., For.) (Page 132) (2 cred.; no prereq.; lect. VI MTWTh, 110ME; lab. VII-IX TTh, 281ME) Tegge
- 5.‡ **General Metal Work.** (Ind.Ed.) (Page 132) (2 cred.; no prereq.; VI-IX MWF; 50ME) Hughes
- 6.‡ **Machine Shop Practice.** (Aero.E., Mining, and Met.E.) (Page 132) (2 cred.; no prereq.; lect. III MTWTh, 110ME; lab. VI-VIII TTh, 171ME) Crowder
- 7.‡ **Machine Shop Practice.** (Ind.Ed.) (Page 132) (2 cred.; no prereq.; VI-IX MWF; 171ME) Crowder
- 8.‡ **Machine Shop Practice.** (E.E., Prebus.) (Page 132) (2 cred.; prereq. Draw. 2, Inor.Chem. 2, 5, 7, or 10; lect. III MTWTh, 110ME; lab. VI-VIII TTh, 171ME) Crowder
11. **Materials and Processing I.** (Page 132) (2 cred.; prereq. Inor.Chem. 2, 5, 7, or 10, Draw. 2; I MWThF; 202ME) Hughes
- 12.‡ **Materials and Processing II.** (Page 132) (2 cred.; prereq. (M.E.) reg. or cred. in 11; Inor.Chem. 1 or 4; (Mines, Met.) Inor.Chem. 1 or 4 and jr.; (Prebus.) 1, 4 and Inor.Chem. 1 or 4; lect. IV MTWF, 110ME; lab. VI-VIII MW, 70ME) Holtby
- 13.‡ **Materials and Processing III.** (Page 132) (2 cred.; prereq. (M.E.) reg. or cred. in 11, Inor.Chem. 2 or 5, Draw. 2; (Mines, Met.) Inor.Chem. 2 or 5 and jr.; lect. III MTWTh, 321ME; lab. VI-VIII TTh, 50ME) Hughes
- 14.‡ **Materials and Processing IV.** (Page 132) (2 cred.; prereq. 11, 12, 13, 16, reg. or cred. in 22; lect. II MWThF, 208ME; lab. V-VII MW, 171ME) Crowder
- 15.‡ **Materials and Processing V.** (Page 132) (2 cred.; prereq. 14; lect. IV MTWF, 208ME; lab. VI-VIII MW, 171ME) Crowder
- 16.‡ **Materials and Processing VI.** (Page 132) (2 cred.; prereq. 11, Phys. 7; lect. III MTWF, 208ME; lab. VII-IX MW, 281ME) Tegge
- 17.‡ **Materials and Processing VII.** (Page 133) (2 cred.; prereq. 11, 12, 13, 16; lect. I MTWF, 208ME; lab. VI-VIII TTh, 251ME) Holtby
60. **Woodworking Machinery.** (Page 133) (2 cred.; prereq. 4, Draw. 1, 2; ar.) Tegge
- 110.‡ **Foundry Control Methods.** (Page 133) (3 cred.; prereq. 12, Inor.Chem. 16; ar.) Holtby
- 111.‡ **Advanced Foundry Practice.** (Page 133) (3 cred.; prereq. 110, Phys. 9, Inor.Chem. 16; ar.) Holtby

- 112.‡ **Plastic Processing.** (Page 133) (3 cred.; no prereq.; ar.) Holtby
- 113.‡ **Advanced Machine Shop Practice.** (Page 133) (3 cred.; prereq. 15.; ar.) Crowder
- 114.‡ **Advanced Welding.** (Page 133) (3 cred.; prereq. 13; ar.) Hughes
121. **Machine Design.** (Page 134) (2 cred.; prereq. 24; VI-IX TTh; 208ME) Ryan
147. **Design of Steam Machinery.** (Page 137) (2 cred.; prereq. 141; VI-IX MWF; 325ME) Andeen
150. **Internal Combustion Engines.** (Page 138) (4 cred.; prereq. 131) Melby
Lect. I MTWThF, 321ME Lab. 1, VI-VIII MW, 460ME
2, VI-VIII TTh, 460ME
160. **Heating and Ventilation.** (Page 140) (3 cred.; prereq. 132, M.&M. 127, and 129 or 130; III MTWThF; 202ME) Algren
- 169.‡ **Heating and Ventilation Laboratory.** (Page 141) (2 cred.; prereq. 35, reg. or cred. in 160; VI-IX TTh; Ex) Algren
171. **Elements of Industrial Engineering and Management.** (Page 141) (3 cred.; prereq. 15, 16, 17; II MTWThF; 106ME) Whitson
174. **Motion and Time Study Laboratory.** (Page 142) (2 cred.; prereq. 171; lect. VI TTh, 106ME; lab. VII-IX TTh, 180ME) Whitson
182. **Refrigeration Design.** (Page 142) (2 cred.; prereq. 180; VI-IX MWF; 314ME) Jordan
- 190-191-192. **Seminar.** (Page 143) (1 cred.; sr.) Jordan, Ryan, Andeen
Sec. 1, I MTh, 106ME Sec. 3, III MTh, 106ME
2, II MTh, 110ME 4, IV MTh, 106ME
- 198.‡ **Industrial Instrumentation and Automatic Control.** (Page 136) (3 cred.; sr.; lect. IV MTWTh, 302ME; lab. VI-VIII MW, 359ME) LaJoy
- 290-291-292. **Mechanical Engineering Research.** (Page 143) (Cred. ar.; grad. and cons. of dept.; ar.) Murphy

Second Term

- 4.‡ **Machine Woodworking.** (See first term)
- 5.‡ **General Metal Work.** (See first term)
- 6.‡ **Machine Shop Practice.** (See first term)
- 7.‡ **Machine Shop Practice.** (See first term)
- 8.‡ **Machine Shop Practice.** (See first term)
- 11.‡ **Materials and Processing I.** (See first term)
- 12.‡ **Materials and Processing II.** (See first term)
- 13.‡ **Materials and Processing III.** (See first term)
- 14.‡ **Materials and Processing IV.** (See first term)
- 15.‡ **Materials and Processing V.** (See first term)
- 16.‡ **Materials and Processing VI.** (See first term)
- 17.‡ **Materials and Processing VII.** (See first term)
60. **Woodworking Machinery.** (See first term)
- 110.‡ **Foundry Control Methods.** (See first term)
- 111.‡ **Advanced Foundry Practice.** (See first term)
- 112.‡ **Plastic Processing.** (See first term)
- 113.‡ **Advanced Machine Shop Practice.** (See first term)
- 114.‡ **Advanced Welding.** (See first term)
122. **Mechanical Engineering Design I.** (Page 134) (2 cred.; prereq. 121; VI-IX MW; 208ME) Ryan
141. **Heat Power Engineering.** (Page 137) (3 cred.; prereq. 132; I MTWThF; 110ME) Andeen
- 149.‡ **Advanced Steam Laboratory.** (Page 137) (2 cred.; prereq. 35, 141; VI-IX TTh; Ex) Andeen
154. **Design of Internal Combustion Engines.** (Page 138) (2 cred.; prereq. 121, 150; VI-IX MWF; 325ME) Melby

- 159.‡ **Internal Combustion Engine Laboratory.** (Page 139) (2 cred.; prereq. reg. or cred. in 150; VI-IX TTh; 480ME) Melby
161. **Heating, Ventilation, and Air Conditioning Design.** (Page 141) (2 cred.; prereq. 160; VI-IX MWF; 214ME) Algren
171. **Elements of Industrial Engineering and Management.** (See first term)
172. **Industrial Plants.** (Page 141) (2 cred.; prereq. 171, reg. or cred. in 174; lect. VI TTh, 106ME; lab. VII-IX TTh, 180ME) Whitson
180. **Refrigeration.** (Page 142) (3 cred.; prereq. 132, reg. or cred. in 160; III MTWThF; 302ME) Jordan
- 189.‡ **Refrigeration Laboratory.** (Page 142) (2 cred.; prereq. reg. or cred. in 180; VI-IX TTh; 362ME) Jordan
- 190-191-192. **Seminar.** (See first term)
- 290-291-292. **Mechanical Engineering Research.** (See first term)

School of Chemistry

An asterisk (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See pages 18-19.)

A double dagger (‡) indicates courses for which course fees are charged. See Course Fees, pages 14-17.

INORGANIC CHEMISTRY

First Term

- 1.‡ **General Inorganic Chemistry.** Study of the general laws of chemistry and of the nonmetals and their compounds. (4 cred.; all; no prereq.; lect. II MTWThF, 225C; rec. V T, 225C; lab. V-VII MW, ar. C) O'Brien
- 4.‡ **General Inorganic Chemistry.** Study of the general laws of chemistry and of the nonmetals and their compounds. More intensive than 1. (4 cred.; for premed., etc.; prereq. high school chem.; lect. I MTWThF, 225C; rec. V Th, 225C; lab. V-VII MW, ar. C) Maynard
- 6.‡ **General Inorganic Chemistry.** Study of the general laws of chemistry and of the nonmetals and their compounds. (5 cred.; all; no prereq.; lect. II MTWThF, 225C; rec. V T, 225C; lab. V-VIII MWF, ar. C) O'Brien
- 9.‡ **General Inorganic Chemistry.** Study of the general laws of chemistry and of the nonmetals and their compounds. More intensive than 6. (5 cred.; prereq. high school chem.; lect. I MTWThF, 225C; rec. V Th, 225C; lab. V-VIII MWF, ar. C) Maynard
- 11.‡ **Semimicro Qualitative Analysis.** Laboratory work in systematic qualitative analysis of the cations with lectures on solutions, ionization, chemical and physical equilibria, oxidation and reduction, etc. (4 cred.; prereq. 2, 5, 7, or 10; lect. II MTWThF, 325C; rec. IV M, 325C; lab. V-VIII MW, ar. C) Barber
- 12.‡ **Semimicro Qualitative Analysis.** Laboratory work in systematic qualitative analysis of the cations with lectures on solutions, ionization, chemical and physical equilibria, oxidation and reduction, etc. (5 cred.; prereq. 7 or 10; lect. II MTWThF, 325C; rec. IV M, 325C; lab. V-VIII MWF, ar. C) Barber
- 13.‡ **Semimicro Qualitative Analysis.** Laboratory work in systematic qualitative analysis of the anions with lectures on solutions, ionization, chemical and physical equilibria, oxidation, reduction, etc. (5 cred.; prereq. 12; lect. II MTWThF, 115C; rec. IV W, 325C; lab. V-VII MTWThF, ar. C) Heisig
- 102.*‡ **Semimicro Qualitative Analysis.** Advanced analysis of the anions and cations. (3 cred.; jr., sr., grad.; prereq. Anal.Chem 1-2; lect. and lab. hrs. ar.) Barber

- 103.* **Advanced Inorganic Chemistry.** Atomic structure and the properties of elements based thereon. (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1, 2, Org.Chem. 62; lect. IV MTWThF, 111C; rec. VI Th, 111C) O'Brien
- 105.* **Advanced Inorganic Chemistry.** Coordination compounds. (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1, 2, Org.Chem. 62; lect. III MTWThF, 215C; rec. V T, 215C) Maynard
- 109.*‡ **Synthetic Inorganic Chemistry.** Methods of preparation and purification of inorganic compounds of special interest. Current literature. (3 to 5 cred.; jr., sr., grad.; prereq. 13 or cons. of instr.; lect. and lab. hrs. ar.) Heisig
- 301.* **Research in Inorganic Chemistry.** (Cred. and hrs. ar.) Barber, Heisig, Maynard, O'Brien

Second Term

- 2.‡ **General Inorganic Chemistry.** (See 1, first term) (4 cred.; prereq. 1; lect. II MTWThF, 225C; rec. V T, 225C; lab. V-VII MW, ar. C) Brasted
- 5.‡ **General Inorganic Chemistry.** (See 4, first term) (4 cred.; prereq. 4; lect. I MTWThF, 225C; rec. V Th, 225C; lab. V-VII MW, ar. C) Pray
- 7.‡ **General Inorganic Chemistry.** (See 6, first term) (5 cred.; prereq. 6; lect. II MTWThF, 225C; rec. V T, 225C; lab. V-VIII MWF, ar. C) Brasted
- 10.‡ **General Inorganic Chemistry.** (See 9, first term) (5 cred.; prereq. 9; lect. I MTWThF, 225C; rec. V Th, 225C; lab. V-VIII MWF, ar. C) Pray
- 11.‡ **Semimicro Qualitative Analysis.** (See first term) (Lect. III MTWThF, 325C; rec. V T, 410C; lab. V-VIII MW, ar. C) Johnson
- 12.‡ **Semimicro Qualitative Analysis.** (See first term) (Lect. III MTWThF, 325C; rec. V T, 410C; lab. V-VIII MWF, ar. C) Johnson
- 104.* **Chemistry of the More Representative Elements.** (3 cred.; jr., sr., grad.; prereq. Anal.Chem. 1, 2, Org.Chem. 62; lect. IV MTWThF, 215C; rec. V Th, 215C) Brasted
- 108.* **Nonaqueous Systems.** A study of the principal nonaqueous systems—both protonic and aprotic systems. The theories of Bronsted, Lewis, and Usanovich are considered in detail. (3 cred.; prereq. Anal.Chem. 1, 2, Org.Chem. 62; lect. III MTWThF, 115C; rec. V T, 115C) Pray
- 111.* **Elements of Group IV A.** Silicon and related elements. Review of current studies on boron, silicon, germanium, tin, and lead with emphasis on recent silicon chemistry. (3 cred.; prereq. Anal.Chem. 1, 2, Org.Chem. 62; lect. II MTWThF, 215C; rec. V W, 215C) Johnson
- 302.* **Research in Inorganic Chemistry.** (Cred. and hrs. ar.) Brasted, Johnson, Pray

ANALYTICAL CHEMISTRY

First Term

- 1.‡ **Quantitative Analysis.** (Gravimetric) Introductory course covering the general principles and methods of gravimetric analysis. Typical problems are assigned and attention given to proper laboratory practice. (5 cred.; prereq. qual. anal.; lect., rec., quiz V-VI TTh, V F, 325C; lab. V-VIII MW, VII-VIII TTh, VI-VIII F, 310C) Herr
- 7.‡ **Quantitative Analysis.** (Premed.) Introductory course covering the general principles and methods of quantitative analysis, both gravimetric and volumetric. Typical problems are assigned and attention given to proper laboratory practice. (4 cred.; prereq. qual. anal.; lect., rec., quiz V MWF, 225C; lab. VI-VIII MWF, V-VIII TTh, 310C) Herr
- 123.‡ **Advanced Analytical Chemistry.** Problems are assigned that involve special technique on more advanced theory than the basic courses. (3 cred.; prereq. grav. and vol. anal.; hrs. ar.) Herr
- 203.* **Selected Topics in Analytical Chemistry.** (Cred. and hrs. ar.) Herr
- 301.* **Research in Quantitative Analysis.** (Cred. and hrs. ar.) Herr

Second Term

- 2.‡ **Quantitative Analysis.** (Volumetric) Introductory course covering the general principles and methods of volumetric analysis. Typical problems are assigned and attention given to proper laboratory practice. (5 cred.; prereq. qual. anal.; lect., rec., quiz V-VI TTh, V F, 325C; lab. V-VIII MW, VII-VIII TTh, VI-VIII F, 310C) Herr
- 7.‡ **Quantitative Analysis.** (See first term) (Lect., rec., quiz V MWF, 225C; lab. VI-VIII MWF, V-VIII TTh, 310C) Herr
- 123.‡ **Advanced Analytical Chemistry.** (See first term) Herr
- 203.* **Selected Topics in Analytical Chemistry.** (See first term) Herr
- 301.* **Research in Quantitative Analysis.** (See first term) Herr

ORGANIC CHEMISTRY

First Term

- 61.‡‡ **Elementary Organic Chemistry.** (For all colleges) Discussion of important classes of organic compounds, both aliphatic and aromatic. Laboratory includes the preparation of typical substances. (4 cred.; prereq. Inor.Chem. 11 or 12; lect. I MTWThF, 325C; rec. II TTh, 410C; lab. II-IV MWF, 390C; lab. conf. III TTh, 410C) Dodson and assistants
101. **Intermediate Organic Chemistry.** A survey course in which are considered important topics such as unusual types of aliphatic, aromatic, and heterocyclic compounds, natural products, and industrial processes. (3 cred.; prereq. 14 cred. org. chem.; III MTWThF, 315C) Lauer
- 102.‡ **Organic Qualitative Analysis.** (Elementary course) An introduction to the methods of organic qualitative analysis. (3 cred.; prereq. one year of org. chem.; lect. II MW, 315C; 12 hrs. of lab. work ar.) (Limit 20 students) Lauer and assistants
- 130.‡ **Organic Quantitative Analysis.** Methods of proximate and ultimate analysis of organic compounds with special attention to semimicro methods. (3 cred.; prereq. 63 and 64, Anal.Chem. 1, 2 are advisable; hrs. ar.) (Limit 12 students) Lauer and assistants
- 139.‡ **Advanced Organic Chemistry Laboratory Work.** Selected laboratory problems of an advanced nature, including some original work. Ability to read German is assumed. (3 cred.; prereq. 63 and 64; hrs. ar.) (Limit 20 students) Arnold and assistants
- 205.* **Theoretical Organic Chemistry.** Stereochemistry and related topics of a theoretical nature. (3 cred.; prereq. 107; I MTWThF; 315C) Arnold
301. **Research in Organic Chemistry.** (Cred. ar.; prereq. 110; hrs. ar.) Arnold, Dodson, Lauer

Second Term

- 62.‡‡ **Elementary Organic Chemistry** (See 61, first term) (4 cred.; prereq. 61; lect. I MTWThF, 325C; rec. II TTh, 410C; lab. II-IV MWF, 390C; lab. conference III TTh, 410C) Parham and assistants
- 110.‡ **Organic Qualitative Analysis.** (Advanced course) Reactions of typical functional groups, identification of pure organic compounds, separation and identification of constituents of mixtures. (3 cred.; prereq. 102 or equiv.; lect. IV MW, 315C; 12 hrs. of lab. work ar.) (Limit 20 students) Dodson and assistants
- 143.* **Chemistry of Natural Products.** Discussion of the organic chemistry of important classes of natural products. (3 cred.; prereq. 63 and 64; II MTWThF; 315C) Dodson
302. **Research in Organic Chemistry.** (Cred. ar.; prereq. 110; hrs. ar.) Dodson, Parham

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

PHYSICAL CHEMISTRY

First Term

- 104, †105, †106. ‡ Physical Chemistry Laboratory. (1 or 2 cred.; VI-VIII MW; 190C) Wertz
107. † ‡ Elementary Physical Chemistry. (Primarily for premed. students) (3 cred.; prereq. two yrs. of college chem., one year of college phys.; lect. I MTWTh, 410C; rec. I F, 410C; lab. VI-VIII MW, 190C) Wertz
301. Research in Physical Chemistry. (Cred. and hrs. ar.) Wertz

Second Term

- 104, †105, †106. ‡ Physical Chemistry Laboratory. (See first term) Livingston
108. † ‡ Elementary Physical Chemistry. (Premed.) (Prereq. 107; I MTWThF; 410C) Livingston
301. Research in Physical Chemistry. (See first term) Livingston

CHEMICAL ENGINEERING

First Term

- 151 ‡-152. † § Chemical Manufacture. Semi-works manufacture of inorganic and organic chemical products. (3 cred. each; prereq. 103, 131; lab. II-X MTWThF; lect., conferences (151) I MTWThF, 111C, (152) I MTWThF, 115C) Stephenson, Madden, Bancroft
156. ‡ Special Problems. Investigation in chemical engineering; library or laboratory research. (Cred. ar.; 1 conf. hr. per week, lab. hrs. ar.) Staff
301. Research in Chemical Engineering. Unit operations, applied unit processes, electrochemistry and electric furnace work, and chemical manufacture. (Cred. ar.) Staff

Second Term

- 151 ‡-152. † § Chemical Manufacture. (See first term) (Lab. II-X MTWThF; lect., conferences (151) I MTWThF, 111C, (152) I MTWThF, 115C) Stoppel, Preckshot, Bond
156. ‡ Special Problems. (See first term) Staff
301. Research in Chemical Engineering. (See first term) Staff

School of Mines and Metallurgy

MINING

First Term

15. Field Trip. Field work on the iron ranges of Minnesota. Surveying of an underground mine, including shaft plumbing. Survey of open-pit mine including an estimate of the surface stripping. Solar and stellar observations. (6 cred.; prereq. 13, 14; 4 weeks beginning about June 15) Heilig, Pfeider, Yardley

Third Term

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

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

§ Each laboratory section is limited.

COLLEGE OF AGRICULTURE, FORESTRY, HOME ECONOMICS, AND VETERINARY MEDICINE

GENERAL INFORMATION

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

The offerings in home economics are designed primarily for upperclass undergraduate students and qualified graduate students. The courses listed represent the various fields of home economics.

GRADUATE STUDY

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

In Home Economics, graduate course work is given in the first term only.

Students intending to register for any phase of graduate work and who expect to obtain credit in the Graduate School should make arrangements through the proper committees and with the dean of the Graduate School and should register in that school. See page 18.

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 pages 18-19.)

A double dagger (‡) indicates courses for which course fees are charged. See Course Fees, pages 14-17.

AGRICULTURAL BIOCHEMISTRY

First Term

1. **Introduction to Organic Chemistry.** (Page 80§) (5 cred.; soph., jr., sr.; prereq. Inorg.Chem. 1 and 2, or 4 and 5¶; I-II MTWThF; 113SnH) Wands
118.‡ **Laboratory Problems in Biochemistry.** (Page 81§) (3 to 5 cred.; jr., sr., grad.; cons. of instr.; ar.; ar.) Staff

Second Term

- 118.‡ **Laboratory Problems in Biochemistry.** (Page 81§) (3 to 5 cred.; jr., sr., grad.; cons. of instr.; ar.; ar.) Staff

§ For description see *Bulletin of the College of Agriculture, Forestry, and Home Economics*.

¶ By special cons. of the student's adviser, General College Courses 7A and 7C will be acceptable as prerequisites for home economics students.

AGRICULTURAL ECONOMICS

First Term

1. **Principles of Economics I.** (Page 82§) (3 cred.; soph., jr., sr.; no prereq.; I MTWThF; 109HH) Lowe
105. **Advanced Farm Management.** A study of the factors affecting a farmer's success, and methods for evaluating a farm business. Sources of information, measures of quality of organization and operation, farm business analysis. Analysis of an actual farm operation. Lectures, 3 weeks; individual problems, 3 weeks. (Lect. work only, 2 cred.; lect. work and problems, 3 cred.; jr., sr., grad.; prereq. 102 or equiv.; I-II MTWThF; 311HH) Engene
140. **Marketing Organization: Staples.** (Page 83§) (3 cred.; jr., sr., grad.; prereq. 40; III MTWThF; 311HH) Cox

Second Term

2. **Principles of Economics II.** (Page 82§) (5 cred.; soph., jr., sr.; prereq. 1; I-II MTWThF; 109HH) Lowe
- 200.* **General Seminar in Agricultural Economics.** (3 cred.; grad.; ar.; 311HH) Jesness

AGRICULTURAL EDUCATION

See Agricultural Education, College of Education, page 100.

AGRICULTURAL ENGINEERING

First Term

- 40.‡ **Mechanical Training.** Instruction and laboratory practice in mechanical trades embracing rope work, belts, lacings and pulleys, cement work, soldering, electric wiring. (Limited to 30) (2 to 4 cred.; no prereq.; lect. VI TWThF, lab. ar.; 106, 20En) Dent
- 41.‡ **Metal Work.** Instruction and laboratory practice in mechanical trades embracing cold metal work, pipe fitting, oxyacetylene welding, brazing and cutting, and electric arc welding. Students may select any or all of the above and concentrate on those of special interest. Special attention given to practical application and features of special interest to teachers. (Limited to 30) (2 to 4 cred.; no prereq.; lect. VII TWThF, lab. ar.; 106, 20En) Dent

Second Term

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

AGRONOMY AND PLANT GENETICS

First Term

AGRONOMY

- 201.* **Research in Farm Crops.** (Page 42†) (Cred. ar.; grad.; prereq. 121, 123; ar.) Dunham, Schmid

† For description see *Bulletin of the Graduate School.*

‡ For description see *Bulletin of the College of Agriculture, Forestry, and Home Economics.*

PLANT GENETICS

- 241.* **Research in Plant Genetics.** (Page 42†) (Cred. ar.; grad.; ar.) Burnham, Hayes, Rinke, Lambert, Thomas
 244. **Laboratory Methods in Plant Breeding.** (Page 42†) (Cred. ar.; grad.; ar.) Staff

Second Term

AGRONOMY

- 201.* **Research in Farm Crops.** (See first term)

PLANT GENETICS

- 241.* **Research in Plant Genetics.** (See first term)
 244. **Laboratory Methods in Plant Breeding.** (See first term)

ANIMAL HUSBANDRY

First Term

56. **Livestock Feeding I.** The nutritional requirements of farm animals and the composition and characteristics of livestock feeds. Calculation of rations and a study of the different methods of feeding. (3 cred.; jr., sr.; prereq. 1; III-IV MWF; 3LsPav) R. M. Anderson
 213.* **Research in Animal Husbandry.** Special problems assigned to students to be worked out under the supervision of a faculty member. (3 to 5 cred.; grad.; ar.; 3LsPav) Ferrin, Harvey, Winters

Second Term

57. **Livestock Feeding II.** The values of single feeds and of combinations of feeds for beef cattle, horses, sheep, and swine. Economical rations for breeding animals and for market livestock. (3 cred.; jr., sr.; prereq. 56; III-IV MWF; 3LsPav) P. A. Anderson
 213.* **Research in Animal Husbandry.** (See first term)

DAIRY HUSBANDRY

First Term

- 208,*210.* **Research in Dairy Production.** (Page 75†) (Cred. ar.; prereq. preliminary grad. work; ar.) Fitch, Petersen, Gullickson, Hervey
 209,*211.* **Research in Dairy Manufacturing.** (Page 75†) (Cred. ar.; prereq. preliminary grad. work; ar.) Combs, Coulter
 215,*216.* **Research in Dairy Bacteriology.** (Page 76†) (Cred. ar.; prereq. preliminary grad. work; ar.) Olson, Jezeski

Second Term

- 208,*210.* **Research in Dairy Production.** (See first term)
 209,*211.* **Research in Dairy Manufacturing.** (See first term)
 215,*216.* **Research in Dairy Bacteriology.** (See first term)

ENTOMOLOGY AND ECONOMIC ZOOLOGY¶

First Term

- 5.‡ **Economic Entomology.** The life histories, habits, and methods of control of the insect pests of orchard, field, and garden. Lab. work in the determination of the more important forms. (5 cred.; soph., jr., sr.; prereq. Zool. 14-15 or equiv.; lect. VI MTWTh, VI-VII F, 307CofH; lab. VII-IX MTWTh, 302CofH) Spieth

† For description see *Bulletin of the Graduate School.*

¶ For additional courses see Itasca Park Biological Station, page 75.

13. **Field Zoology.** Offered at Itasca Park (1½ cred.; fr.; no prereq.) Dawson, Harden
197. **Introduction to Research.** Preparation for investigational work in lines of entomology. Advanced laboratory, field, and library work; training in the preparation of bibliographies and manuscripts; special problems. (Cred. ar.; jr., sr., grad.; prereq. 9 hrs. ent., and other prescribed work; ar. CofH) Mickel, Granovsky, Hodson, Haydak, Marshall, Richards, Smith, Burroughs, Cutkomp
204. **Research in Entomology.** Ample opportunity for research work in various phases of entomology will be afforded properly qualified students. This work will be individual. Students who plan to undertake special problems should correspond with the division relative to methods of collection and preparation of material. (Cred. ar.; grad.; ar.) Mickel, Granovsky, Hodson, Haydak, Marshall, Richards, Smith, Burroughs, Cutkomp

Second Term

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

FORESTRY

First Term

(Offered at Itasca Park. Open only to students who have completed at least two quarters of forestry, or one year in a junior college, or other college. Preparatory courses in botany, dendrology, and zoology are desirable. The schedule is arranged to occupy the student's full time for 5½ days per week. Largely field or laboratory work. Required of all forestry students including transfer students.)

- For.2. Important Forest Plants.** (1½ cred.; no prereq.) Ar.
- For.5. Field Silvics.** (Page 106§) (1½ cred.; no prereq.) Hansen and assistant
- For.6. Field Mensuration.** (Page 106§) (1½ cred.; no prereq.) Brown and assistant
- For.11 Camp Management.** (1 cred.) Brown
- Ent.13. Field Zoology.** (See under Ent. and Ec. Zool.) (1½ cred.; no prereq.) Dawson, Harden

HOME ECONOMICS

First Term

- F.L.15. The Home and Its Furnishing.** Present-day housing problems; choice of location; house plans as they affect family living; exterior and interior design; choice of appropriate furnishings and accessories; building furnishing costs. (3 cred.; all; no prereq.; II MTWThF; 206WeH) Ludwig
49. **Household Equipment.** A study of the principles which should guide in the selection, operation, care, and convenient arrangement of equipment in the home. (3 cred.; soph.; prereq. Ag.En. 35 or cons. of instr.; III-V MTWF; 106HE) Fuller
50. **Textiles.** Consumer textile problems; the characteristics of fibers, fabrics, and modern finishes; the selection, maintenance, and serviceability of fabrics for clothing and home furnishing; laboratory study of selected fabrics. (3 cred.; jr., sr.; prereq. 1; VII-VIII MTWThF and 2 hrs. ar.; 307HE) Morris
85. **Home Management Principles.** A study and discussion of managerial aspects of homemaking; work simplification of household activities; financial records and budget-making for the individual and the family. (3 cred.; jr., sr.; prereq. 40, 41 advised; IV MTWThF; 313HE) Hurst

§ For description see *Bulletin of the College of Agriculture, Forestry, and Home Economics.*

86. **Home Management Laboratory.** Residence for one-half quarter in one of the two home management houses, with direct experience in managing and sharing the various activities and responsibilities involved in the group-living of the students in residence. (4 cred.; jr., sr., open only to students registered in the regular year; prereq. 85 or parallel, 40, 41 advised, P.H. 52a,b; Home Management House) Wempner, Hurst
120. **Art History.** A general view of the history of art from the Egyptian period to the present. The development of painting, sculpture, architecture, furniture, and costume is studied in order to understand the influences and the contributions of the past and their significance to contemporary houses, their furnishings and to dress. Field trips. (3 cred.; jr., sr., grad.; IV MTWThF and 1 hr. ar.; 203HE) Esteros
125. **Advanced Costume Design.** A study of modern and historic costume, figure construction. Studies and reports on selected topics. Problems in draping and sketching designs for various figure types. Pencil, crayon, and watercolor techniques. (3 cred.; jr., sr.; prereq. 3 or cons. of instr., 22; I-II MTWThF and 2 hrs. ar.; 304HE) Esteros
140. **New Developments in Food Preparation.** Demonstrations, discussions, and some laboratory work illustrating recent trends in food preparation. (3 cred.; jr., sr., grad.; prereq. 40 or equiv.; VI MTWThF and VII-IX Th; 107HE) Tarulli
142. **Experimental Cookery.** An intensive study of problems in foods and food preparation by means of individual laboratory problems. (3 cred.; jr., sr.; prereq. 40, Agr.Biochem. 1; I-III MTWF; 107HE) Tarulli
181. **Housing Problems of the Family.** Plans for both urban and rural homes will be considered and the economic, art, and social aspects will be evaluated. Discussions, field trips, and classroom analyses will constitute a part of the work. (3 cred.; jr., sr., grad.; prereq. 24 or 27; VII M, VII-VIII TW, VII-IX F; 305HE) Paulsen

Second Term

- F.L.15. **The Home and Its Furnishing.** (See first term) (II MTWThF; 206WeH) Ludwig
85. **Home Management Principles.** (See first term) (IV MTWThF; 203HE) Thomson
86. **Home Management Laboratory.** (See first term) Wempner, Thomson

HOME ECONOMICS EDUCATION

See Home Economics Education, College of Education, page 110.

HORTICULTURE

First Term

- 190-191-192. **Special Problems.** (2 to 4 cred.; jr., sr., grad.; ar.) Alderman, Brierley, Currence, Krantz, Hutchins, Wilcox, Winter, Nylund, Phillips
- 247.* **Reports on Special Horticultural Topics.** (Cred. ar., maximum 9 cred.) Alderman, Brierley, Currence, Krantz, Hutchins, Wilcox, Winter, Nylund
- 249.* **Research in Horticultural Crop Breeding.** (Cred. ar., maximum 9 cred.) Currence, Krantz, Hutchins, Wilcox

Second Term

- 190-191-192. **Special Problems.** (See first term)
- 247.* **Reports on Special Horticultural Topics.** (See first term)
- 249.* **Research in Horticultural Crop Breeding.** (See first term)

PLANT PATHOLOGY AND BOTANY¶

First Term

- 206.* **Research in Plant Pathology.** (Page 166† description for 203-204-205) (Cred. ar.; grad.; PP) Stakman, J. J. Christensen, Eide, Hart, C. M. Christensen, Dosedall, Kernkamp, King
- 210.* **Special Problems in Mycology.** (Page 166†) (Cred. ar.; grad.; prereq. 105-106-107; PP) Stakman, C. M. Christensen, Dosedall
- 257.* **Research Problems in Applied Plant Physiology.** (Page 167†) (Cred. ar.; grad.; AgrBot) Landon
- 263.* **Research Problems in Agricultural Botany.** (Page 167†) (Cred. ar.; grad.; AgrBot) Larson, Stakman

Second Term

- 206.* **Research in Plant Pathology.** (See first term)
- 210.* **Special Problems in Mycology.** (See first term)
- 257.* **Research Problems in Applied Plant Physiology.** (See first term)
- 263.* **Research Problems in Agricultural Botany.** (See first term)

POULTRY HUSBANDRY

First Term

55. **Special Problems.** Problems assigned to fit the needs of the student. (1-3 cred.; jr., sr.; prereq. 6 cred. poul. husb.; ar.) Staff
- 214.* **Research in Poultry Husbandry.** Research problems assigned to meet the needs of the student. (Cred. ar.; grad.; prereq. cons. of instr.; ar.) Sloan, Canfield
- 215.* **Research in Poultry Nutrition.** Literature reviews or experiments in the fundamental problems involved in satisfying the nutrient requirements of poultry. (Cred. ar.; grad.; prereq. cons. of instr.; ar.) Briggs
- 216.* **Research in Poultry Breeding.** Studies of the problems involved in the genetic improvement of poultry. (Cred. ar.; grad.; prereq. cons. of instr.; ar.) Shoffner

Second Term

55. **Special Problems.** (See first term)
- 214.* **Research in Poultry Husbandry.** (See first term)
- 215.* **Research in Poultry Nutrition.** (See first term)
- 216.* **Research in Poultry Breeding.** (See first term)

RHETORIC

First Term

- 22.‡ **Public Speaking.** A practical course in the fundamentals of speech making. Particular emphasis upon organizing the speech and projecting it to the audience. (3 cred.; soph., jr., sr.; prereq. satis. of fresh. comm. req.) Woods
 Sec. 1, III MTWThF, 311En Sec. 2, VI MTWThF, 311En
51. **Exposition.** Essays and articles; technical writing; application letters; review of English usage. (3 cred.; jr., sr.; prereq. satis. of fresh. comm. req.) Brown
 Sec. 1, IV MTWThF, 312En Sec. 2, V MTWThF, 312En

Second Term

- 22.‡ **Public Speaking.** (See first term)
 Sec. 1, I MTWThF, 312En, Rosegrant Sec. 2, III MTWThF, 312En, Nichols

† For description see *Bulletin of the Graduate School* for 1948-1950.

‡ For additional courses see Itasca Park Biological Station, page 75.

51. Exposition. (See first term)

Sec. 1, III MTWThF, 311En, Rosegrant

Sec. 2, IV MTWThF, 312En, Nichols

SOILS*First Term*

- 202.* **Research Problems in Soils.** (Page 194†) (2-5 cred.; grad.; prereq. cons. of instr. in advance of registration; ar.) Rost, McMiller, Caldwell, MacGregor

Second Term

- 202.* **Research Problems in Soils.** (See first term)

VETERINARY MEDICINE‡‡*First Term*

104. **Special Studies in Animal Anatomy.** Individual problems for further study in Animal Anatomy. (1-3 cred.; registration for more than one term permitted; prereq. 101; ar.; ar.) Kernkamp, Kitchell
114. **Special Studies in Animal Histology and Embryology.** Individual problems for further study in animal histology and embryology and histological techniques. (1-3 cred.; registration for more than one term permitted; prereq. 111 or equiv.; ar.; ar.) Kernkamp, Kitchell
201. **Advanced Animal and Poultry Pathology.** Studies of clinical material, collateral reading, and conferences. (Cred. ar.; prereq. cons. of instr.) Kernkamp, Fenstermacher, Sautter
205. **Advanced Animal Bacteriology.** Studies on clinical material, collateral reading, and conferences. (Cred. ar.; prereq. cons. of instr.) Pomeroy, Fenstermacher
209. **Advanced Clinical Techniques.** A more detailed application of clinical techniques in the diagnosis and therapy of animal diseases. (Cred. ar.; prereq. cons. of instr.) Boyd, Campbell
213. **Veterinary Obstetrics and Gynecology.** A course designed to give the student a more comprehensive training in the disorders and diseases of reproduction of domestic animals through studies on clinical material, collateral reading, and conferences. (Cred. ar.; prereq. cons. of instr.) Boyd
230. **Research in Veterinary Medicine.** (Cred. ar.) Staff

Second Term

104. **Special Studies in Animal Anatomy.** (See first term) Kernkamp, Kitchell
114. **Special Studies in Animal Histology and Embryology.** (See first term) Kernkamp, Kitchell
201. **Advanced Animal and Poultry Pathology.** (See first term) Kernkamp, Fenstermacher, Sautter
205. **Advanced Animal Bacteriology.** (See first term) Pomeroy, Fenstermacher
209. **Advanced Clinical Techniques.** (See first term) Boyd, Campbell
213. **Veterinary Obstetrics and Gynecology.** (See first term) Boyd
230. **Research in Veterinary Medicine.** (See first term) Staff

† For description see *Bulletin of the Graduate School*.

‡‡ Tuition fees per term in Veterinary Medicine are \$37.50 for resident and \$65 for non-resident students, incidental fee per term \$7, and deposit \$5.

ITASCA PARK BIOLOGICAL STATION

GENERAL INFORMATION

During the second term of the Summer Session an excellent opportunity for the study of terrestrial and fresh-water biology in its most fundamental aspects is presented by the Biological Station of the University of Minnesota, located at Itasca State Park, approximately 220 miles northwest of the Twin Cities.

These classes will be conducted cooperatively by various departments in the College of Agriculture, Forestry, Home Economics, and Veterinary Medicine and the College of Science, Literature, and the Arts. Classes will be held at the station beginning July 24, ending August 26.

Interested students may find the following opportunities offered by the Biological Station at Itasca State Park:

1. Elementary and advanced instruction for college undergraduates, graduate students, high school and nature study teachers, and others interested.
2. Opportunities for graduate students who may wish to pursue biological investigation in the lakes, fields, or forests close to the station.
3. Opportunities for teachers of botany, zoology, and biology, as well as for guest investigators for independent research in terrestrial and fresh-water biology.

Admission and Registration¶

The courses in the Biological Station are open to all qualified graduate and undergraduate students who have had usual preliminary courses in biological subjects.

Inquiries concerning the Biological Station should be directed to and reservations made through the College Office, University Farm, St. Paul 1.

Applications for admission for graduate students will be handled through the College Office, from which they will be forwarded to the dean of the Graduate School for approval. The applicant will then be informed of the status of his eligibility for admission to both the Graduate School and the Biological Station.

All students should make reservations at the College Office on the St. Paul Campus. Students should note that a reservation is not registration, and all *on-campus students* should complete their registration at the Admissions office on either campus as early as possible but not later than July 21. *Off-campus students* may register upon arrival at the Biological Station on July 24.

Fees and Expenses

Registrations will be accepted during June and July but not later than July 24.

The following fees are payable by each registrant on or before July 24 and must be paid before registration is completed:

Tuition fee	\$50.00
Incidental fee	7.00
General deposit fee	2.00
Laboratory fee	5.00
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Total fees for the term	\$64.00

In addition, it is estimated, on the basis of the experience of other groups of students, that the cost of board will not exceed a total of \$55 for the five weeks. A charge of \$5 is made for room in the dormitories and cabins of the Biological Station and is to be paid to the director during the first week of the session.

¶ See pages 9-10 for general University of Minnesota admission.

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.

Laboratory fee includes the use of microscopes, nets, boats, various class supplies, and accessories.

The estimated cost of \$124 for the five-week session does not include traveling expenses, clothing, laundry, and minor incidental personal expenses.

Tuition and fees are payable on or before July 24. After July 24 the late registration fee will be charged according to the following schedule:

Tuesday, July 25	\$2.00
Wednesday, July 26	3.00
Thursday, July 27	4.00
Friday, July 28	5.00

No registration will be accepted after July 28 without the approval of the professor in charge and payment of a \$5 fee.

Courses of Instruction†

An asterisk (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See pages 18-19.)

A double dagger (‡) indicates courses for which course fees are charged. (See Course Fees, pages 14-17.)

BOTANY

Second Term

- Pl.Path.56. Introduction to the Study of Fungi. (Course also listed under Plant Pathology) (4 cred.; jr., sr.; prereq. 9 cred. in bot. or cons. of instr.; MTh) Christensen
- 112.‡ Aquatic Flowering Plants. (4 cred.; prereq. bot. or zool. 10 cred., or cons. of instr.; WS) Fassett
116. Summer Flora of Minnesota. (4 cred.; prereq. Bot. 8, or cons. of instr.; TF) Fassett
131. Field Ecology. (4 cred.; prereq. Bot. 50 or 130 or For. 3-4; MTh) Buell
- Pl.Path.156. Advanced Study of Fungi. (Course also listed under Plant Pathology) (4 cred.; prereq. bot. 9 cred. or cons. of instr.; MTh) C. M. Christensen
170. Bryophytes and Pteridophytes. (4 cred.; prereq. 10 cred. biology or cons. of instr.; MTh) Evans
176. Freshwater Algae. (4 cred.; prereq. 10 cred. of biology, or cons. of instr.; TF) Evans
- 196.*‡ Problems in Ecology, Taxonomy, Bryology, or Algology. (Cred. ar.; adv. students with proper qualifications) Buell, Evans, Fassett
- 224.* Research Problems in Ecology. (Cred. ar.; grad. students with proper qualifications) Buell

ENTOMOLOGY AND ECONOMIC ZOOLOGY

59. Field Entomology. (4 cred.; jr., sr.; prereq. Zool. 1-2-3 or equiv.; TF) Spieth
68. Natural History of the Higher Vertebrates. (4 cred.; prereq. Zool. 1-2-3 or equiv.; TF) (There will be a "cost-basis charge" for mileage on field trips) Marshall
124. The Biology of Immature Insects. (4 cred.; prereq. 15 cred. in zool. and Ent. 52 or equiv. or cons. of the Division of Entomology and Economic Zoology; WS) Spieth

† For detailed description of courses write for special bulletin of the Biological Station.

162. **Ecology of Terrestrial Vertebrates.** (4 cred.; prereq. Ent. 68 or Zool. 57-58, and Ent. 63 or equiv. and Bot. 20; MTh) (There will be a "cost-basis charge" for mileage on field trips) Marshall
- 196.* **Special Problems in Entomology and Economic Zoology.** (Cred. ar.; adv. students with proper qualifications) Spieth, Marshall

PLANT PATHOLOGY AND BOTANY

56. **Introduction to the Study of Fungi.** (Course also listed under Botany) (4 cred.; jr., sr.; prereq. bot. 9 cred. or cons. of instr.; MTh) C. M. Christensen
156. **Advanced Study of Fungi.** (Course also listed under Botany) (4 cred.; prereq. bot. 9 cred. or cons. of instr.; MTh) C. M. Christensen
- 210.* **Special Problems in Mycology.** (Cred. ar.; grad.; prereq. 105-106-107) C. M. Christensen

ZOOLOGY

- 55.‡ **Natural History of Invertebrates and Fishes.** (4 cred.; prereq. Zool. 1-2-3 or equiv.; WS) Eddy
107. **Protozoology.** (Not offered in 1950)
- 115.‡ **Advanced Natural History of Invertebrates and Fishes.** (4 cred.; prereq. 15 cred. in zool.; WS) Eddy
- 119.‡ **Limnology.** (4 cred.; prereq. 15 cred. in zool.; MTh) Eddy
- 143.‡ **Animal Parasites.** (4 cred.; prereq. 15 cred. in zool. or cons. of instr.; TF) Chandler
- 198.* **Problems in Parasitology, Ecology, and Limnology.** (Cred. ar.; prereq. Zool. 1-2-3 and special requirements; adv. students) Eddy, Chandler

LAW SCHOOL

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

The Law School will offer a complete quarter (June 12 to August 26) of law work with courses for advanced students. Any student, resident or nonresident, who has completed at least one year of law school work at an accredited school is eligible to register. The credits listed are quarter credits and represent the number of class hours per week which the course carries. Registration will be for the quarter, not for a single term. Courses tentatively offered are:

Advanced Courses

Summer Quarter

- Private Corporations.** (6 cred.) Anderson
- Banking.** (6 cred.) Kinyon
- Sales.** (6 cred.) McClure
- Administrative Law.** (6 cred.) Davis
- Conflicts.** (6 cred.) Read
- Taxation.** (6 cred.) Ar.
- Municipal Corporations.** (3 cred.) Lockhart
- Damages.** (3 cred.) Rarick
- Insurance.** (3 cred.) Ar.
- Federal Jurisdiction.** (3 cred.) Lockhart

Tuition fees for the quarter are: resident, \$75; nonresident, \$90. Credit hour fee: resident, \$6.25; nonresident, \$7.50. There will be the usual incidental fee of \$14 for the Coffman Memorial Union, the Health Service, the *Minnesota Daily*, etc. Deposit fee for the quarter, \$2.

MEDICAL SCHOOL

GENERAL INFORMATION

Students in the freshman, sophomore, and junior years at the University of Minnesota Medical School are required to be in attendance during the first term of the Summer Session of 1950. Their courses are a continuation of those begun in the spring quarter and are not open to students from other institutions. For other courses offered in various departments of the Medical School attention is directed to the course listings by departments.

A student applying to register in preclinical subjects for the purpose of making up deficiencies incurred at other medical schools should present, at the time of application for such registration, a letter from the dean of his medical school approving the purpose of the registration. Medical students from other schools, whether their purpose is make-up work or to accelerate or broaden their medical education, are registered as adult special students and receive subject credit only. If such students desire legal time credit toward a medical degree, they should make arrangements with the institution from which they intend to receive the degree. No obligation to accept such students for registration in the regular medical course is attached to adult special registration. They should consult the deans or department heads in their own schools as to the equivalence of the courses in which they might be interested at the University of Minnesota. (See departmental listings.)

In the *clinical* departments, instruction of junior medical students is a continuation of spring quarter courses up to the end of the first term. During the second term both sophomore and junior medical students, at their election, may continue in their clinical work as externs. Similar externship training is offered to medical students from other institutions and to practicing physicians during both first and second terms of the Summer Session. (See departmental schedules.)

The externships will offer an integrated program of bedside teaching and clinical responsibilities, ward rounds, conferences and seminars, occupying approximately three fourths of the registrant's time, on the wards of the University Hospitals, the Minneapolis General Hospital, and the Veterans Hospital, for recently graduated physicians, and qualified medical students from other institutions who are recommended by their respective deans. Registration may be for either or both terms of the Summer Session. Research opportunities may be afforded registrants who remain for both terms. At the discretion of individual clinical departments, selected registrants may remain during the month of September for additional clinical training. Since an externship will not occupy completely the registrant's time, about one fourth of this time may, if he chooses, be devoted to electives in basic sciences or in another clinical department. Medical classes of the Summer Session, 1950 will begin on June 14.

Opportunity for Practitioners

In addition to the externships which have been described above, attention is called to continuation courses offered from time to time throughout the year under the General Extension Division and the Center for Continuation Study. These courses are exclusively for practitioners and are largely practical in nature. Circulars may be obtained from the Center for Continuation Study.

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

Graduate Courses

Opportunities are offered in the various departments of the Medical School for work during the Summer Session for advanced degrees, either in laboratory or clinical branches of medicine. Such work involves admission to, and registration in, the Graduate School. For detailed information see the statement under Graduate School in this bulletin or the special bulletin on graduate work in medicine.

A special program of courses has been arranged through the Center for Continuation Study for medical officers returning to civilian life from military service and a restricted number of others. A limited number of such physicians may live at the Center for Continuation Study. Address Director, Postgraduate Medical Education, University of Minnesota, for details.

An asterisk (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See pages 18-19.)

Fees

Medical students desiring time credit—The Medical School tuition fee for a full Summer Session is \$77 for residents of Minnesota, and \$150 for nonresidents. Less than a full program may be paid for on a credit-hour basis, namely \$6.50 per credit hour (nonresidents \$12.50). In addition each student will pay the incidental fee of \$14.00 and a deposit of \$5. Students in certain courses are required to furnish microscopes.

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

	Per Quarter	Per Term
Tuition fee	\$77.00 (\$150.00)	\$38.50 (\$75.00)
Incidental fee	14.00	7.00
Deposit	5.00	5.00

Medical students or physicians registering for externships—A tuition fee of \$37.50 per term is charged for the externships listed under the various clinical departments. This is the same for residents and nonresidents of Minnesota. No additional tuition will be charged for such electives in the basic sciences or in clinical work as the registrant may have time for, not to exceed one-fourth time. Each registrant for an externship will pay the incidental fee of \$7 per term. In elective courses where a microscope is required this may be rented from the University.

Nonmedical Summer Session students—Students who do not desire to register for time credit toward a medical degree, and who are ineligible to register for an externship or for a program of clinical subjects, may pay the regular Summer Session fee of \$44.50 per term plus special course fees as indicated in course descriptions, and a \$2 deposit. At their option, they are also permitted to register for less than a full program and pay on a credit hour basis of \$6.50 per credit hour (nonresidents \$12.50). In such case the incidental fee of \$14.00 and a deposit of \$5 are required.

A double dagger (‡) indicates courses for which course fees are charged. (See Course Fees, pages 14-17.)

ANATOMY

First Term

REQUIRED COURSES

Courses 104 and 111, which are required work for freshman medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools. Graduate students who have registered for either of these courses in the spring quarter may continue by registering in the first term of the Summer Session.

ELECTIVE COURSES

149. **Experimental Neurology.** Study of morphology of central nervous system as determined by experimental methods. (Cred. ar.; prereq. 111; ar.; ar.) Campbell
150. **Special Topics in Neurology.** Study of literature on selected phases of human neurology. (Cred. ar.; prereq. 111; ar.; ar.) Rasmussen
- 156.‡ **Advanced Anatomy.** Individual problems in gross anatomy, histology, hematology or neurology. (Cred. ar.; cons. of instr.; ar.; ar.) Boyden, Rasmussen, Campbell, Kirschbaum, Williams, Hartmann, Sundberg
159. **Experimental Methods for the Study of Neoplastic Growths.** (2 cred.; prereq. 103 or equiv.; lect. and dem. VII-IX TTh; ar.; ar.) Kirschbaum
- 165.§ **Hematology.** For medical technologists and others. (Enrolment limited) (4 cred.; prereq. 103, 104 or equiv.; lect. II MTWTh, 213IA; lab. III-IV MTWTh, 231IA) Sundberg and assistant
204. **Research in Anatomy.** (Gross anatomy, histology, hematology or neurology) (Cred. ar.; cons. of instr.; ar.; ar.) Boyden, Rasmussen, Campbell, Kirschbaum, Williams, Hartmann, Sundberg

Second Term

REQUIRED COURSES

58. **Anatomy of the Extremities.** (Enrolment limited to students of Kenny Institute) (3 cred.; lect. VI MTWThF, 304IA; lab. VII MTWThF, ar.) Wells

ELECTIVE COURSES

- 156.‡ **Advanced Anatomy.** (See first term) Wells
204. **Research in Anatomy.** (See first term) Wells

First and Second Terms

ELECTIVE COURSES

- 100.‡§-101.‡§ **Gross Human Anatomy.** Dissection of lower and upper halves of body, respectively. (Enrolment limited) (9 cred. each; prereq. Zool. 1-2-3 and preferably 22; lect. I MTWThF, 304IA; lab. II-IV, VI-VII MTWThF, 306IA) Boyden (100 or 101); Wells (101 or 100). (These two courses may be run consecutively or concurrently, depending upon number of students and their needs. Cons. of head, Department of Anatomy, required before June 1)

BACTERIOLOGY AND IMMUNOLOGY

First Term

- 53.‡§§ **General Bacteriology.** (Page 15†) (5 cred.; prereq. 10 cred. in chem. and 4 cred. in biological sciences; lect. II MTWThF, 102IA; lab. III-IV MTWThF, 201MH) Schmidt
- 116.‡§§ **Immunology.** (Page 15†) (3 cred.; prereq. 53 and 102; lect. VI-VII TWThF, 214MH; lab. VIII TWThF, 201MH) Watson
- 121.¶ **Physiology of Bacteria.** Growth; enzymes; metabolism; dormancy; death. (3 cred.; jr., sr., grad.; prereq. 53 and 8 cred. in org. chem. or biochem.; III MTWThF; 214MH) Lones
201. **Research in Bacteriology.** (Page 50††) (Cred. and hrs. ar.) Syverton, Watson

† For description see *Medical School Bulletin*, 1949-1951.

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

¶ 122 will be offered next summer.

†† For description see *Graduate School Bulletin*.

§§ Microscope required. Students may obtain use of microscope by purchasing a \$3 microscope card from the bursar.

Second Term

- 102.†§ **Medical Bacteriology.** (Page 15†) (5 cred.; prereq. 53; lect. VI MTWThF, 214MH; lab. VII-VIII MTWThF, 201MH) Syverton, DeKruif
- 104.†§ **Sanitary Bacteriology.** Standard and other methods for the bacteriological analysis of water, sewage, food, and dairy products. Preparation of standard culture media, technique, and evaluation of results. Primarily for majors in bacteriology. (4 cred.; jr., sr., grad.; prereq. 53 and 15 cred. in chem.; lect. II MTThF, 113MeS; lab. III-IV MTThF, 201MH) Johansson
201. **Research in Bacteriology.** (Page 50††) (Cred. and hrs. ar.) Syverton

MEDICINE**DIVISION OF INTERNAL MEDICINE****First Term****REQUIRED COURSES**

Courses 102, 104, and 111, which are required work for sophomore and junior medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

First and Second Terms**ELECTIVE COURSES**

132. **Diagnosis and Treatment of Diseases of the Lungs.** Lectures and clinics in the dispensary and on the hospital wards. Lectures with or without hospital work. (Cred. and hrs. ar.; jr., sr.; not less than 10 students) Myers
136. **The Respiratory Organs in Health and Disease.** (Cred. and hrs. ar.; jr., sr.; limited to 6 students) Myers
140. **Externship in Medicine.** Not less than 10 students; limited to 54 students. Of the total number, 15 can be taken to serve as junior clerks on each of the medical services at the University and the Minneapolis General Hospitals, and 24 to serve as senior clerks in the Medical Clinic at the University Hospitals. Applicants must have passed satisfactorily the first two years of medicine in a Class A medical school. In selecting the senior clerks to serve in the Medical Clinic at the University Hospitals, preference will be given to students who have also satisfactorily completed the third (junior) year of medicine. Watson and staff

COURSES FOR GRADUATE STUDENTS

201. **Clinical Medicine.** (Cred. ar.) Watson, Spink, Ebert, Aagaard, Flink, Hoffbauer, Nesbitt, Tucker
203. **Research in Medicine.** Watson, Spink, Ebert, Aagaard, Flink, Hoffbauer, Nesbitt, Schwartz, Tucker
205. **Tuberculosis.** Myers
206. **Clinical Conference.** Presentation of problem cases. Discussion of diagnosis and treatment and consideration of pertinent literature. (1 cred.; 9 a.m. F) Watson, Ebert, and staff
207. **Clinical Pathological Conference.** Presentation of clinical features, necropsy findings, and discussion. Medical and surgical cases. (1 cred.; 11 a.m. W) Dawson, Watson, Wangenstein, and staff
208. **Clinical Radiological Conference.** Presentation and discussion of X-ray films, from the Medical Service, with clinical correlation. (1 cred.; 9 a.m. M) Rigler, Watson, and staff

† For description see *Medical School Bulletin, 1949-1951.*

§ Microscope required. Students may obtain use of microscope by purchasing a \$3 microscope card from the bursar.

†† For description see *Graduate School Bulletin.*

213. **Cardiovascular Seminar.** Weekly conference on clinical cardiovascular problems, held jointly by the Departments of Medicine and Pediatrics. (1 cred.; hrs. ar.) Shapiro, Aagaard, and others

DIVISION OF DERMATOLOGY

First and Second Terms

ELECTIVE COURSES

- 159.† **Assistantship, Dermatology and Syphilis.** (Prereq. jr. med. clerkship; limited to 1 student; Minneapolis General Hospital) Laymon
 160.† **Assistantship and Conference in Dermatology.** (Prereq. jr. med. clerkship; limited to one student; University Hospitals) Michelson and staff
 162.† **Assistantship in Dermatology.** (Prereq. 124; limited to 2 students; Minneapolis General Hospital) Laymon
 163.† **Treatment of Syphilis.** (Limited to 2 students; University Hospitals) Michelson and staff
 164.† **Seminar in Pathology.** Histopathology of the skin. Clinical and pathological phases will be exemplified. (Prereq. Path. 102) Michelson
 165.† **Seminar in Dermatology.** Michelson and staff
 166.† **Allergy and Dermatology.** (Limited to 1 student) Michelson

COURSES FOR GRADUATE STUDENTS

225. **Clinical Dermatology and Syphilology.** (University Hospitals) Michelson and staff
 226. **Clinical Dermatology and Syphilology.** (Minneapolis General Hospital) Laymon and staff
 227. **Histopathology of the Skin.** Michelson and staff
 228. **Research in Dermatology and Syphilology.** Michelson, Laymon, and staff

Second Term

ELECTIVE COURSES

167. **Externship in Dermatology.** (Limited to 10 students) Michelson and staff

DIVISION OF CLINICAL LABORATORY MEDICINE

First and Second Terms

COURSES FOR GRADUATE STUDENTS

235. **Advanced Clinical Laboratory Medicine.** Evans and staff
 236. **Research on Clinical Laboratory Problems.** Evans and staff

OBSTETRICS AND GYNECOLOGY

First Term

REQUIRED COURSES

Course 124, which is required work for junior medical students, is continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

† Cons. of instr. required.

First Term

ELECTIVE COURSES

- 160a. **Externship in Obstetrics and Gynecology.** (Limited to 10 students)
Elective for junior and senior medical students and recent graduates. Course will consist of clinical work in obstetrics and gynecology. Under exceptional circumstances investigative work can be done. Registration may be for one or both terms. (6 cred.) McKelvey and staff

Second Term

- 160b. **Externship in Obstetrics and Gynecology.** (See 160a, first term) McKelvey and staff

First and Second Terms

COURSES FOR GRADUATE STUDENTS

201. **Advanced Obstetrics and Gynecology. Part I.** Required of first-year fellows. McKelvey, Lang, Mitchell, and staff
205. **Advanced Obstetrics and Gynecology. Part II.** Required of second-year fellows. McKelvey, Lang, Mitchell, and staff
209. **Advanced Obstetrics and Gynecology. Part III.** Required of third-year fellows. McKelvey, Lang, Mitchell, and staff
216. **Research.** Staff
303. **Obstetric and Gynecologic Histology.** (6 cred.; hr. ar.) McKelvey and staff

OPHTHALMOLOGY AND OTOLARYNGOLOGY

First and Second Terms

ELECTIVE COURSES

121. **Operative Clinic in Eye.** (Limited to 6 students) (1 cred.; 3:00 to 4:30 T or Th) Hansen and staff
122. **Ophthalmoscopy.** (Limited to 8 students) (2 cred.; 2 sec.; 22 hrs.; days and hrs. ar. with departmental office) Schwartz, Lindberg

PATHOLOGY

First Term

ELECTIVE COURSES

- 107.† **Diagnosis of Tumors.** (2½ cred.; lect. 8:00-9:00 MTWThF, 104IA; lab. 9:00-9:50 MTWThF) McCartney
107a.† **Surgical Pathology.** (2½ cred.; 10:00-12:00 MTWThF; ar.) McCartney

Second Term

ELECTIVE COURSES

- 107.† **Diagnosis of Tumors.** (2½ cred.; lect. 8:00-9:00 MTWThF, 104IA; lab. 9:00-9:50 MTWThF) Hebbel
107a.† **Surgical Pathology.** (2½ cred.; 10:00-12:00 MTWThF; 104IA) Hebbel

First and Second Terms

ELECTIVE COURSES

104. **Autopsies.** Postmortem technique. (Cred. and hrs. ar.; prereq. 102) Staff
111. **Conference on Autopsies.** (1 cred.; prereq. 102; 12:30-1:30 T; 104IA) Staff

† Second term 107 and 107a are not repetitions of the first term but rather continuations.

201. **Research.** Students with the necessary preliminary training may elect research either as a major or minor in pathology. Permission required. (Cred. and hrs. ar.) Dawson

PEDIATRICS

First Term

REQUIRED COURSES

Courses 122 (2 cred.) and 124 (6 cred.), which are required work for junior medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools. Course 135 (3 cred.), which is required work for senior medical students, is continued through both terms of Summer Session. (See *Medical School Bulletin*, pages 35, 36)

First and Second Terms

ELECTIVE COURSES

- 152.† **Fundamental Principles of Nutrition and Metabolism as Applied to Children.** Seminar course. (1 cred.) May, Ziegler
- 154.† **Endocrinology as Applied to Pediatrics.** Seminar course. (1 cred.) McQuarrie
- 162.† **Common Behavior Disturbances in Childhood.** Their recognition and management. (1 cred.) Jensen and staff
170. **Rheumatic Fever and Heart Diseases in Childhood.** (1 cred.) May, Shapiro, Dwan, F. H. Adams
- 174A. **Dispensary Externship in Pediatrics.** Patients in Pediatric Dispensary are assigned to individual students for examination, treatment, and "follow-up" observation under supervision. Special clinics in well-baby care, allergy, heart metabolism, and child psychiatry are attended weekly. (Limited to 10 students) (4 cred. per term; 9:00-12:00 and 1:00-3:00 MTWThF; University Hospitals and Minneapolis General Hospital) McQuarrie, J. M. Adams, Jensen, May, Stoesser, Platou, F. H. Adams, Engel, and other senior staff members
- 174B. **In-Patient Externship in Pediatrics.** Patients in the pediatric wards at the University Hospitals and Minneapolis General Hospital are assigned to individual students for clinical history, physical and laboratory diagnosis, treatment and "follow-up" observation under supervision of the pediatric and consulting staff members. (4½ cred. per term; 9:00-12:00 and 1:00-5:00 MTWThF, 8:00-12:00 S) McQuarrie, J. M. Adams, Jensen, May, F. H. Adams and junior staff members

COURSES FOR GRADUATE STUDENTS

200. **Graduate Seminar in Pediatrics.** (1½ cred.; 4:00-5:30 M; Ped.Conf.Rm.) McQuarrie and senior staff
202. **Pediatric Clinic.** (5 cred.; 9:00-12:00 MTWThF; Out-Patient Departments, Minneapolis General and University Hospitals) J. M. Adams, Jensen, May, F. H. Adams, and junior staff
204. **Three-month Residence in Pediatrics at the University Hospitals or Minneapolis General Hospital.** (7 cred.; 9:00-12:00 and 1:00-5:00 MTWThF) McQuarrie, J. M. Adams, Jensen, and May at University Hospitals; Platou, Huenekens, Seham, Stoesser, Dwan, Richdorf, and F. H. Adams at Minneapolis General Hospital
208. **Pediatric Research.** Special problems. Students may collaborate with members of the staff or with other students. (Cred. ar.) McQuarrie, J. M. Adams, Jensen, May, Ziegler, F. H. Adams
210. **Special Clinics in Pediatrics.** (1 cred.) J. M. Adams, May, Shapiro, Stoesser, F. H. Adams, R. Engel, Dwan

† Not offered to fewer than 10 students.

PHARMACOLOGY

First Term

REQUIRED COURSES

102. **General and Experimental Pharmacology.** (Page 17†) (Limited to soph. med. students and grad. students. A continuation from spring quarter. Only those students who have registered for this course in the spring quarter may take the continuation in the Summer Session; 3 cred.; lect. II MTThF, III W, 15MeS; lab. A I-III T, IV W, lab. B VI-VIII T, IV F, 101 MH) Bieter, Wright, Cranston

ELECTIVE COURSES

110. **Toxicology.** A study of systemic quantitative toxicological analysis. Lect. and lab. Lect. only may be taken if desired. (Cred. and hrs. ar.) Wright
 111. **Advanced Toxicology.** A laboratory study of quantitative toxicological analysis. (Cred. and hrs. ar.; prereq. 110 or may be taken simultaneously) Wright

First and Second Terms

9. **Pharmacology for Nursing Students.** (2 cred.; lect. 22 hrs., VI TTh; 111MeS) Cranston
 203. **Research in Pharmacology.** For grad. and advanced students. (Cred. and hrs. ar.) Wright, Bieter

PHYSIOLOGY

First Term

REQUIRED COURSES

Course 107, which is required work for freshman medical students, is continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools. Formerly part of 103-104.

4. **Human Physiology.** An elementary course consisting of lectures and demonstrations for students desiring an introduction to the subject. (4 cred.; all; prereq. high school or college biology and chem.; lect. or dem. II-III TWThF; 113MeS) King

ELECTIVE COURSES

203. **Research in Physiology.** (Cred. and hrs. ar.) Visscher and others

Second Term

REQUIRED COURSES

60. **Human Physiology.** An elementary course in human physiology. (6 cred.; primarily for med. tech. and 5-year nurs. students; prereq. courses in physiol. chem. and human or mammalian anat.; lect. VI MWF, VII TThF, VIII TTh, 111MeS; conf. IV TTh, 12MeS; lab. VII-IX MW) Reinecke

PHYSIOLOGICAL CHEMISTRY

First Term

REQUIRED COURSES

- 100.‡ **Physiological Chemistry.** (7 cred.; jr., sr.; prereq. org. and phys. chem. and phys.; lect. IV MTWThF, 113MeS, VI MTWThF, 12MeS; lab. I-III MTWTh, 310MH) Armstrong, Barnum, Carr

† For description, see *Medical School Bulletin*.

ELECTIVE COURSES

153. **Problems in Physiological Chemistry.** Special work arranged with qualified students. May be taken one or both terms. (Cred. and hrs. ar.; prereq. 100, 101) Armstrong, Barnum, Carr
205. **Research in Physiological Chemistry.** (Cred. and hrs. ar.) Armstrong, Barnum, Carr

Second Term

REQUIRED COURSES

- 101.† **Physiological Chemistry.** (6 cred.; jr., sr.; prereq. 100; lect. IV MTWThF, VI MWF, 113MeS; lab. I-III MTWTh, 310MH) Glick, Cohen, Dunshee
153. **Problems in Physiological Chemistry.** (See first term) Glick, Cohen, Dunshee
205. **Research in Physiological Chemistry.** (See first term) Glick, Cohen, Dunshee

PSYCHIATRY AND NEUROLOGY

First Term

REQUIRED COURSES

Courses 101, 102, 103, and 120, which are required work for freshman, sophomore, or junior medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

ELECTIVE COURSES FOR NONMEDICAL STUDENTS

173. **Mental Hygiene Aspects of Public Health Nursing.** For graduate nurses only. (3 cred.; 33 hrs.) Shalit

Second Term

- S.W.235. **Introductory Psychiatry.** (See Social Work, page 51) For upper group only. (3 cred.; 33 hrs.; prereq. elem. psy. and soc.; II MTWThF; 111MeS) Hinckley

First and Second Terms

ELECTIVE COURSES FOR MEDICAL STUDENTS

152. **Externship in Psychiatry.** (Limited to 10 students) This course offers the opportunity for medical students and physicians in practice to obtain clinical psychiatric training during the Summer Session. The training consists largely of work with patients under supervision and seminar type of discussion of cases. (6 cred.; hrs. ar.) Staff
153. **Externship in Neurology.** (Limited to 10 students) This course offers the opportunity for medical students and physicians in practice to obtain clinical neurological training during the summer quarter. The training consists largely of work with patients under supervision and seminar type of discussion of cases. (6 cred.; hrs. ar.) Staff

COURSES FOR GRADUATE MEDICAL STUDENTS

208. **Clinical Neurology.** Supervised practice, in-patient and out-patient services. (Cred and hrs. ar.) Baker and staff
- 208x. **Clinical Psychiatry.** Supervised practice, in-patient and out-patient services. (Cred. and hrs. ar.) Hastings and staff
- 208y. **Clinical Child Psychiatry.** Supervised practice, in-patient and out-patient services. (Cred. and hrs. ar.) Jensen and staff

209. **Research in Neurology.** (Cred. and hrs. ar.) Baker
 212. **Survey of Neuropathology.** (Cred. ar.; prereq. 210; ar.) Baker
 226. **Neurological-Neurosurgical Conference.** (Same as Surgery 318) Review of X-rays, case histories, and neuropathological material on neurological and neurosurgical cases. (1 cred.; hrs. ar.) Baker
 228. **Research in Neuropathology.** (Cred. and hrs. ar.) Baker

SCHOOL OF PUBLIC HEALTH†

First Term

- 50.¶ **Public and Personal Health.** Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings. (3 cred.; jr., sr., not open to students who have taken 3, 4, 52, 53 or 100 or G.C. 10C; no prereq.; II MTWThF; 214MH.) Bates
- 51.¶ **Community Hygiene.** Elementary concepts of development, spread, and prevention of preventable diseases; community programs for their control. (3 cred.; jr., sr.; prereq. 3, G.C. 10C; not open to students who have taken 4, 50, 52, or 100. Students exempted from 3 on the basis of military service will not be accepted in this course; II MTWThF; 12MeS) Fox
60. **Tuberculosis and Its Control.** History of tuberculosis movement and campaign in the United States. Early diagnosis and sanatorium treatment; tuberculosis in children; the psychology of tuberculosis; supervision of returned sanatoria patients; state program for the eradication of tuberculosis; legislation. 2 cred.; jr., sr.; prereq. 4 or 50 or 51 or 52 or 53, or 100 and 62; IV MTWF; 129MH) Myers
62. **Principles of Public Health Nursing.** Trends, principles, and techniques in public health nursing service including family health guidance. (3 cred.; public health nurses; prereq. 53 or 100 or equiv., but may be taken with 100; II MTWThF; 111MeS) Vroom
64. **Cancer Nursing.** The cancer control program; discussion of etiology, symptoms, metastatic processes, diagnostic procedures, treatment and prognosis with implications of nursing care; related emotional, social, and economic problems; place of resources in cancer control. (3 cred.; VI MTWThF; 129MH) Maloy
- 65.‡§ **Field Practice in School Nursing.** Credits allowed according to experience in this field. Working with the school nurse, the student observes and participates in the activities included in the school nursing program; special attention to organization, relationships, techniques, methods of informal health teaching, provision for handicapped children, and home visiting. (Cred. ar.; public health nurses only, jr., sr.; prereq. 53 or 100, 62, and 67) Vroom
- 66.‡§ **Field Practice in Rural Nursing.** Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only, jr., sr.; prereq. 53 or 100, 62, and 67) Vroom
- 67.‡§ **Field Practice with Family Health Agency.** Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics and in home visiting. This includes bedside care of all types of cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only, jr., sr.; prereq. 53 or 100, 62) Vroom

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

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

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

101. **Public Health Administration and Field Work.** A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; sr. med. students only) Anderson
104. **Epidemiology.** Factors underlying the spread of infectious diseases, with detailed discussion of selected diseases; simple statistical and epidemiologic methods in the study of diseases. Lectures and laboratory. (3 cred.; jr., sr., grad.; prereq. 53 or 100 and cons. of instr.; physicians, others by cons.; III MTWThF; 129MH) Anderson
140. ‡ **Vital Statistics.** Study of official sources of vital statistics, including population changes, calculation of rates, and graphical exposition of trends. (3 cred.; to be taken in conjunction with 104, cons. of instr.; VI-VIII MWF; 111MeS) Treloar, Hartman
143. **Workshop on Nursing for the Chronically Ill in the Community.** For public health nurses (June 19-30). Purpose: to review medical aspects, explore social and psychological implications, determine community services and nursing responsibilities. (Limited to 25.) (3 cred.; 107 TSP) Wilson, Maloy, and others
144. **Workshop on Nursing in Health Programs for School-Age Children.** For nurses (July 10-28). Purpose: To study educational philosophy, administration, and organization related to school health programs; review children's health needs and to analyze activities to meet those needs such as health appraisal, screening methods, teacher-nurse conference, follow-up records and health of school employees; to re-evaluate the role of the nurse in a broadening school health program. (Limited to 25.) (3 cred.; prereq. 62, 63, 100 and Ed. 81 or cons. of instr.; 107 TSP) Wilson and others

Second Term†

58. **Maternal and Child Hygiene.** The maternal welfare program; importance of breast feeding; conduct of infant welfare clinics in cities and rural communities; consideration of child of preschool and school age as to malnutrition, physical defects, cardiac and nervous disorders. (3 cred.; nurses; prereq. 53 or 100 and 62; I MTWThF; 129MH) Ar.
59. **Health of the School Child.** Mental and physical growth; discovery of physical defects; exercise, fatigue, emotional problems; health habits; diseases of school children; practical problems of health supervision and health instruction. (3 cred.; prereq. 3 and 4, or 3 and 51, or G.C. 10C and 4, or G.C. 10C and 51, or 50, or 53 or 100, exemption from 3 on the basis of military service will not be accepted as substitute for suitable course in personal health; III MTWThF; 214MH) Ar.
63. **Principles of Public Health Nursing II.** Organization of public health nursing services; program planning; evaluation; professional problems in public health nursing. (3 cred.; public health nurses, others admitted by permission; prereq. 53 or 100 or equiv. but may be taken concurrently; II MTWThF; 129MH) Taylor
65. ‡§ **Field Practice in School Nursing.** Credits allowed according to experience in this field. Working with the school nurse, the student observes and participates in the activities included in the school nursing program; special attention to organization, relationships, techniques, methods of informal health teaching, provision for handicapped children, and home visiting. (Cred. ar.; public health nurses only, jr., sr.; prereq. 53 or 100, 62, and 67) Taylor
66. ‡§ **Field Practice in Rural Nursing.** Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development

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

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

of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only, jr., sr.; prereq. 53 or 100, 62, and 67) Taylor

- 67.‡ Field Practice with Family Health Agency.** Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics and in home visiting. This includes bedside care of all types of cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only, jr., sr.; prereq. 53 or 100, 62) Taylor
- 100. Elements of Preventive Medicine and Public Health.** Susceptibility and resistance to disease; occurrence and prevention of communicable, degenerative, and industrial diseases; protection of food, water, and milk; school health work; vital statistics. This course was formerly 53. (5 cred.; public health nurses and students in social work; prereq. 3 or 50 or equiv. and a course in bacteriology; lect. III MTWThF, 111MeS; rec. IV MTWF, 111MeS) Thomson
- 101. Public Health Administration and Field Work.** A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; sr. med. students only) Thomson and associates
- 102. Environmental Sanitation I.** Methods for promoting man's health and comfort by controlling his environment; water supply sanitation; food sanitation; pollution abatement; sewage, excreta, and waste disposal; bathing place sanitation; air hygiene; illumination; housing; control of insect and animal vectors of disease; industrial hygiene and sanitation. (3 cred.; sr., grad.; prereq. 50 or 51 or 53 or 100 or by permission or may be taken concurrently with any of these; I MTWThF; 214MH) Bond
- 125. The Community Health Education Program.** An introductory course for graduate students in public health, education, and related fields with emphasis on problems, principles, and procedures involved in the development of community-wide health education programs. Special attention will be given to group procedures, including community organization, and to the selection and use of media commonly employed in health education. (3 cred.; prereq. 53 or 100, or 104 and 106; II MTWThF; 214MH) Ar.
- 170. Supervision in Public Health Nursing.** Nature of supervision, classification of activities; methods of supervision, including field visitation, individual counseling, group conferences, staff education programs, administrative functions of supervisors, preparation and selection of supervisors. (3 cred.; prereq. 53 or 100, 61, 63, and experience in public health nursing, or by permission; III MTWThF; 105TSP) Taylor
- 174. Supervision Laboratory.** Critical analysis of supervisory procedures. Construction of rating scales, experience and efficiency sheets, manuals, and other materials of supervision. (Cred. ar.; public health nurses only; IV MTWThF; 105TSP) Taylor

See Ed. 81. Introduction to Education for Public Health Nurses, page 100.

BIostatistics

First Term

- 110. Biometric Principles.** An introduction to statistical analysis with emphasis on the basic principles of statistical reasoning. The description of univariate distributions, normal correlations, simple tests of significance, and goodness of fit. Course 111 will be taken concurrently. (3 cred.; prereq. 18 cred. in biol. sci. or math. through anal. geom.; I&IV MWF; 111MeS) Treloar

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

- 111.‡ **Biometry Laboratory.** Practical training in machine calculation and statistical techniques. To be taken concurrently with Course 110. (2 cred.; lab. 12 hrs. ar.; 118MH) Hartman

RADIOLOGY

First Term

REQUIRED COURSES

Course 121, which is required work for junior medical students, is continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

First and Second Terms

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

109. **Externship in Roentgen Diagnosis and Radiation Therapy.** Participation in the work of the X-Ray Department both in technique and in interpretation. The student will be given opportunity to observe and do some fluoroscopy, to assist in X-ray technique, and to observe X-ray interpretation. (Limited to 8 students. Permission required for registration) (Cred. and hrs. ar.; jr., sr., grad.)
- 111.* **Medical Roentgenologic Conference.** Weekly meetings with the medical staff at which all the important medical cases which have had X-ray diagnostic procedures are reviewed from both the clinical and roentgenological points of view. (1 cred.; jr., sr., grad.; II M; Todd Amphitheater, University Hospitals) Rigler and staff
- 124.* **Pediatric-Roentgenologic Conference.** Weekly meetings with the pediatric staff at which all the important pediatric cases which have had X-ray diagnostic procedures are reviewed from both the clinical and roentgenological points of view. (1 cred.; jr., sr., grad.; II T; Todd Amphitheater, University Hospitals) Rigler and staff
- 135c.* **Surgical Roentgenologic Conference.** Weekly meetings with the surgical staff at which all the important surgical cases which have had X-ray diagnostic procedures are reviewed from both the clinical and roentgenological viewpoints. (1 cred.; jr., sr., grad.; II S; Todd Amphitheater, University Hospitals) Rigler and staff
- 163a.* **Neurosurgical-Roentgenologic Conference.** Weekly meetings with the neurosurgical staff at which all the important neurosurgical cases which have had X-ray diagnostic procedures are reviewed from both the clinical and roentgenological points of view. (1 cred.; jr., sr., grad.; VI F; Todd Amphitheater, University Hospitals) Peterson

COURSES PRIMARILY FOR GRADUATE STUDENTS

200. **Research in Roentgenology.** Problems in roentgen diagnosis. (Cred. and hrs. ar.) Rigler and staff
204. **Research Related to Radiation Therapy.** (Cred. and hrs. ar.) Stenstrom and staff
206. **Roentgenoscopy.** The theory and practical application of roentgenoscopy particularly to diseases of the gastrointestinal tract, lungs, and heart. (Cred. and hrs. ar.) Rigler and staff
207. **Roentgen and Radium Therapy.** Treatments of patients under supervision both with medium and high voltage machines and with radium. Problems in connection with these treatments will be thoroughly discussed. (Cred. and hrs. ar.) Stenstrom and staff

- 209. Roentgen Diagnosis.** The theory and practical application of roentgen diagnostic methods to medical cases in general. (Cred. and hrs. ar.) Rigler and staff
- 210. Roentgen Technique.** A consideration of the theory and practical application of the principles of roentgen technique including the study of X-ray machines and X-ray tubes, exposure, technique, and darkroom work. (Cred. and hrs. ar.) Rigler and staff
- 240. Conference in Radiation Therapy.** Discussion of methods and dosage used for treatment of patients referred for X-ray and radium therapy and review of the results from previous treatments on patients with similar conditions. (Cred. and hrs. ar.) Stenstrom and staff

MEDICAL TECHNOLOGY

Before registering, students should consult special advisers in the Medical Technology Office, W-605, University Hospitals.

OCCUPATIONAL THERAPY

Consult Occupational Therapy Office, 3302 Powell Hall, University of Minnesota, Minneapolis 14.

PHYSICAL THERAPY

Consult Physical Therapy Office, W-300, University Hospitals.

SURGERY

First Term

REQUIRED COURSES (UNDERGRADUATE STUDENTS)

Courses 121, 126, 127, 129, and 135, which are required work for sophomore or junior medical students, are continued from the spring quarter through the first term of the Summer Session. Not open to students from other medical schools.

- 139. Operative Surgery.** The student is permitted to participate in surgical procedures on hospital patients in the operating room. (Cred. and hrs. ar.) Dennis, Jones
- 152. Problems in Clinical Investigations.** A study of special case records correlated with literature study. (Cred. and hrs. ar.) Dennis, Creevy, Smith, Hanson, Rice
- 167. Problems in Experimental Surgery.** Students under supervision will investigate problems assigned to them. As their experience increases, they are permitted to do the operations incident to their problems. (Cred. and hrs. ar.) Dennis, Creevy, Smith, Rice

Second Term

- 135abcdek. Junior Clinical Clerkship.** (Externs) Wangensteen, Varco, Leven, Rea, Rice, Lannin
- 139. Operative Surgery.** (Externship) Wangensteen and staff
- 152. Problems in Clinical Investigation.** (Externs) Wangensteen, Varco, Leven, Lannin, Rice
- 167. Problems in Experimental Surgery.** (Externs) Wangensteen, Varco, Leven, Lannin, Rice
- 200. Out-Patient Clinic in Surgery.** Wangensteen, Varco, Leven, Lannin
- 204. Tumor Clinic.** (Externs) Varco
- 214. Surgical Ward Conference.** (Externs) Varco and staff

215. **Roentgenological Conference.** (Externs) Wangensteen, Varco, and staff
 218. **Medical and Surgical Pathology Conference.** (Externs) Wangensteen, Varco, and staff

DIVISION OF GENERAL SURGERY

First and Second Terms

REQUIRED COURSES FOR GRADUATE STUDENTS

200. **Out-Patient Clinic in Surgery.** The student is required to assist in the Out-Patient Surgical Clinic, and to participate in diagnosis and treatment. University Hospitals surgical staff
202. **Applied Surgical Anatomy on the Cadaver.** Surgical fellows prepare dissections with staff supervision.
203. **Proctoscopy and Sigmoidoscopy.** The diagnosis and treatment of lesions of the lower bowel. University Hospitals surgical staff
204. **Tumor Clinic.** A combined clinical and pathological consideration of tumors as seen by the general surgeon. Staffs of Departments of Surgery and Biophysics. Stenstrom, Varco, Kremen
205. **Surgical Diagnosis.** The surgical fellow assists in the instruction of the clinical clerks and interns, and studies problems in diagnosis in the Out-Patient Department and in the University Hospitals. Wangensteen, Dennis, Varco, Rea, Kremen, State, Baronofsky, Bernstein
208. **Surgical Service.** The surgical fellow acts as house surgeon at the University Hospitals. Wangensteen, Dennis, Varco, Bergh, Leven, Rea, Kremen
211. **Operative Surgery.** The surgical fellow acts as first assistant at operations in the University Hospitals, and later may be permitted to operate. Wangensteen, Dennis, Varco, Leven, Rea, Kremen, Baronofsky, Bernstein
214. **Surgical Ward Conference.** Presentation of interesting cases by the students. University Hospitals surgical staff
215. **Roentgenological-Surgical Conference.** A weekly review of the films of all surgical patients. Staffs of the Departments of Radiology and Surgery
216. **Surgical Research.** Problems in experimental or clinical surgery. University Hospitals surgical staff
217. **Surgical Seminar.** Conferences for review of surgical literature, for presentation of cases, and as research. University Hospitals surgical staff
218. **Medical and Surgical Pathological Conference.** Review of interesting cases by the medical, surgical, and pathological staffs

DIVISION OF NEUROSURGERY

REQUIRED COURSES

305. **Neurosurgical Surgery.** The neurosurgical fellow assists in the instruction of the clinical clerks and interns, and studies problems in diagnosis in the Out-Patient Department and in the University Hospitals. Peyton, French
308. **Neurosurgical Service.** The neurosurgical fellow acts as house surgeon at the University Hospitals. Peyton, French
311. **Operative Neurosurgical Surgery.** The neurosurgical fellow acts as first assistant at operations in the University Hospitals, and later may be permitted to operate. Peyton, French
316. **Neurosurgical Research.** Problems in experimental or clinical surgery. University Hospitals surgical staff. Peyton, French
318. **Neurosurgical Conference.** A review of X-rays and case histories on Neurosurgical Service. Peyton

DIVISION OF UROLOGY

REQUIRED COURSES

- 250. Urological Surgery.
- 251. Cystoscopy and Urological Diagnosis.
- 252. Urological Conference.
- 253. Research in Urology.

SCHOOL OF NURSING†

COURSES AND FEES

The program of courses in the 1950 Summer Session has been planned primarily to meet the needs of graduate nurses who hold administrative, supervisory, teaching, and consultant positions. The student may complete courses totaling up to 9 credits or two 5-credit courses in each term of the Summer Session. Students who have been admitted as candidates for the bachelor of science degree in Nursing Education register in the College of Education and pay Summer Session fees. See page 12. Graduate nurses planning to register only for Summer Session courses register in the School of Nursing and pay Summer Session fees. See page 12.¶

The following regular offerings are given in the Summer Session:

Curriculum for Graduate Nurses Leading to the Degree of Bachelor of Science

Nursing education majors may register for courses during Summer Session.

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

Prerequisites to the minor in advanced clinical nursing—medical, obstetric, operating room, nursing of children, psychiatric, rural, surgical, tuberculosis—may be taken in the Summer Session.

Students register in the College of Education and pay Summer Session fees. See page 12.

Basic Curriculum in Professional Nursing Leading to a Bachelor of Science Degree

High school graduates and transfer students from colleges or universities may register for prenursing courses§ in the Summer Session. Students register in the College of Science, Literature, and the Arts and pay Summer Session fees. See page 12.

Students in the professional portion of the curriculum§ register in the School of Nursing and pay regular School of Nursing fees. Residents \$42, nonresidents \$90, plus \$14 incidental fee for the summer quarter.

Curriculum in Practical Nursing Leading to a Certificate††

The fourth quarter of the four-quarter program leading to a certificate in practical nursing is offered during the Summer Session. Applicants are admitted at the beginning of the fall quarter only. Students register in the School of Nursing and pay regular practical nursing fees. Residents \$30, nonresidents \$40, plus \$14 incidental fee for the summer quarter.

† For courses in Public Health Nursing, see pages 88-90.

§ *School of Nursing Bulletin*, 1949-51, pages 9-11.

¶ The Summer Session may be used to supplement deficient basic nursing experience.

†† For additional information see *School of Nursing Bulletin*, 1949-51, pages 19 and 23.

First Term

- Nurs.Ed.60. Ward Administration.** The organization of the hospital; principles of administration and their application to ward management; analysis and maintenance of nursing service; selection, orientation, assignments, and motivation of personnel; planning and conducting clinical teaching programs. (5 cred.; sr., grad. nurse; no prereq.; III-IV MTWThF; 12MeS) Grainger
- Nurs.Ed.62. Introduction to Personnel Work in Nursing.** An introduction to the principles, techniques, and application of the personnel point of view to nursing through consideration of such topics as psychological principles; the nature, measurement, evaluation, and recording of individual differences in intelligence, special abilities, motivation, and personality; and study of counseling techniques appropriate for the nursing staff and faculty to use. (3 cred.; grad. nurse; no prereq.; I MTWThF; 113MeS) Johnston
- Nurs.Ed.68. Construction and Use of Examinations and Other Measurements in Basic Nursing Courses.** (3 cred.; sr., grad. nurse; no prereq.; II MTWThF; 104IA) Johnston
- Nurs.Ed.73. Principles of Economics in Nursing Service Administration.** A study of the principles of business administration in their application to hospital organization and management. (1 cred.; sr., grad. nurse; no prereq.; VII TTh; 113MeS) Stephan
- Nurs.Ed.81. Workshop. Functions of Resource Personnel.** (June 12-24) For nurse education consultants and executives in governmental and private health agencies, professional nursing organizations, schools of nursing, and advanced professional education programs; for nursing service consultants in hospital service. In addition to the problems proposed for study by members of the workshop, pertinent subjects for group discussion will be selected. (3 cred.†††; adv. regis. req.; ar.)
- Nurs.Ed.82. Workshop. Group Work in the Teaching of Nursing.** (June 27-July 8) A two-week workshop for the study of the use of group work in the teaching of nursing. This workshop should be of special interest to teachers and clinical supervisors in nursing. It will be conducted by faculty of the School of Nursing in cooperation with a specialist in the field of group work. (3 cred.†††; adv. regis. req.; ar.)
- Nurs.Ed.83. Workshop. Curriculum Problems in Advanced Clinical Nursing.** (July 10-22) Problems in curriculum development in nursing at the advanced clinical level. Consultants will be available for group and individual projects to meet the special interests of members of the workshop. Some problems already proposed for study relate to selection and evaluation of learning experiences. (3 cred.†††; adv. regis. req.; ar.)
- Nurs.Ed.165. Problems in Nursing Care.** An introduction to research in nursing; each student works on a problem of her own selection, and must demonstrate ability to define the problem, carry on independent study, and prepare a report. (3 cred.; sr., grad.; VII MWF and ar.; 113MeS) Ar.
- Nurs.Ed.190. The Survey in Nursing Education.** Introduction to the use of survey techniques in evaluating an educational situation, as a basis for improvement of an existing program, expansion of a program, establishment of a new program; as a basis for justification of proposed changes involving such areas as budget, facilities, organizational relationships, curriculum. (3 cred.;

††† Credit for Workshops: Students matriculating for a degree planning to register for any workshop should consult their advisers regarding the possibility of using credit for the workshop in their programs.

School of Nursing Committee on Workshops: A faculty committee will review applications for all workshops and approve admissions in advance of registration. This committee will also review requests of students for use of workshop credit in degree programs. Approval of major adviser is necessary before request is considered.

sr., grad., grad. nurse; prereq. experience on faculty of a school of nursing; IV MTWThF; 104IA) Harrington

Note: See also Ed. T 51A, The Teaching of Nursing, College of Education, Methods and Directed Teaching, pages 112-113.

SCHOOL OF DENTISTRY

The School of Dentistry will not offer courses regularly scheduled in the dental curriculum unless the necessity arises to offer instruction for students who may fail and will need to remove such failures before being promoted to the next succeeding class. The clinic will remain open, however, for those who wish to receive instruction in clinical work or for those who may not have completed specified clinical or laboratory requirements for promotion.

The following instructors will be available:

First Term—Clark, Hall, Simon, Speidel, Wittich, Mitchell, Listiak, Yock, Brecht, Baken, Chernausek, Gehrig, Holland, Jensen, Kennedy, Tam

Second Term—Clark, Hall, Simon, Speidel, Wittich, Mitchell, Yock, Hillman, Baken, Chernausek, Gehrig, Holland, Jensen, Kennedy, Tam

Tuition fees for the quarter are: resident, \$75; nonresident, \$120. Credit hour fee: resident, \$6.25; nonresident, \$10. There will be the usual incidental fee of \$14.00 for the Coffman Memorial Union, the Health Service, the *Minnesota Daily*, etc. Deposit fee for the summer quarter only, \$2.

COLLEGE OF EDUCATION

Courses in elementary and secondary education listed in the following pages may be used for *renewal of teaching certificates*. Former teachers re-entering the profession should consult elementary and secondary education advisers or the dean's office, College of Education, concerning a program for renewal of certificates.

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

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

For all general matters relating to admission, advanced standing, credits, honor points, curricula, and requirements for graduation, students should consult the *Bulletin of the College of Education*.

Summer students expecting to become candidates for a Bachelor's degree should apply for admission as regular students in the College of Education by filling out the application form in the Office of Admissions and Records and filing in that office any credentials on the basis of which they wish to request advanced standing. They should also seek as early as possible the advice of the major adviser in the department concerned in order to learn the requirements of the curriculum they will need to complete. Adult special students are not regular degree candidates.

Counseling Services

The staff of the Student Personnel office of the college will be available during the Summer Session terms for consultation concerning admission, requirements of the teaching profession, and for counseling. Appointments should be made in 206 Burton Hall.

Students' Work Committee

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

Workshops

Graduate Credit for Workshops—The amount of graduate credit in workshops which may be used on a Master's degree program is limited. Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate programs.

Curriculum Workshop—In the first term, elementary and secondary school teachers and administrators will work together on their common and special curriculum problems in a workshop located in Marshall High School. Groups from particular schools are urged to enroll for the workshop for joint planning of curriculum projects for their own school systems. Applicants should write to the codirectors, 222 Burton Hall, University of Minnesota. Enrolment limited. A special announcement giving additional information concerning this workshop will be available from the Dean, College of Education, University of Minnesota, Minneapolis 14. (See Ed.C.I. 172)

Workshops in Higher Education—Two workshops in higher education will be jointly sponsored by the College of Education and the North Central Association of Colleges and Secondary Schools. In the first term, the workshop will be scheduled from June 12 to July 7 for the study of problems in the liberal arts colleges related to teacher education. In the second term, the workshop, scheduled from July 31 to August 25, has been planned for teachers colleges staff members studying the problems of teacher education. Applicants for either workshop should write to the Dean, College of Education, University of Minnesota, Minneapolis 14. (See Ed.C.I. 228)

Workshop in Economic Education—A three-week workshop in economic education has been scheduled for June 26 to July 15, sponsored by the Joint Council on Economic Education, and the School of Business Administration and the College of Education of the University of Minnesota. Seventy participants, principally high school teachers from the Upper Midwest area, will be selected for scholarships covering tuition, and board and room for the three-week period. Consultants from education, economics, business, labor, and industry will assist the workshop participants in developing understanding of economic problems and working out plans for the improvement of economic education in their schools and communities. Application blanks may be secured from the Dean, College of Education, University of Minnesota, Minneapolis 14. (See Ed.C.I. 167)

Workshop in General Instrumental Music Education—A workshop for the study of problems in instrumental music education will be scheduled for the first summer term. Inquiries should be addressed to the Workshop Director, 214 Scott Hall, University of Minnesota, Minneapolis 14. (See Mu.Ed. 110E)

Workshop in Rural Education—A workshop for rural teachers and administrators has been planned for the second term as a full day's program for nine credits. Students will register for Ed.C.I. 117, Rural Education for Administrators and Teachers, 3 credits, and for 6 credits in Ed.C.I. 187, Workshop in Rural and Village School Problems. The core course will be scheduled for nine o'clock daily, and will be followed by group and individual projects emphasizing special needs of rural teachers. Application forms for admission to the workshop will be sent on request. Interested students should write to the Dean, College of Education, University of Minnesota, Minneapolis 14.

Marriage and Family Life Education

Several departments of the University, interested in education for marriage and family living, have cooperated in planning coordinated summer offerings for teachers and other professional workers concerned with this area. The basic course, open in the first term for thirty students, will be Materials and Procedures in Marriage and Family Life Education. (See Ed.C.I. 112) Students in this course will plan a full summer term program of nine credits, after consultation with an adviser, adding to the basic course other offerings, selected in terms of the individual's background and interests, from the fields of sociology, child welfare, public health, counseling, psychology, education, home economics, and others. Students of senior or graduate standing with background in psychology and sociology may apply for registration in Ed.C.I. 112, securing application blanks from the Dean, College of Education, University of Minnesota, Minneapolis 14.

Driver Education

A two-week course in Driver Education will be offered from June 19 to June 30, scheduled in the afternoons. The course will include materials and methods for teaching driver education and behind-the-wheel instruction. It will meet the requirements for approval by the State Department of Education for driver education in the schools. (See Ed.C.I.101)

Summer Demonstration High School

The University High School will be in session during the first term of the Summer Session. Instruction will be offered in English, industrial arts, mathematics, general science, chemistry, physics, biology, history, social studies, typing, art, speech, home economics, German, Spanish, and health and safety education. The school is a six-year high school comprising grades seven to twelve, with courses organized to provide individual attention to the needs and capacities of the pupils.

Admission to the Summer Session is open to any pupil of normal high school age. Children of teachers or other professional workers who are attending the Summer Session of the University are especially welcomed in the summer term of the University High School. For information regarding fees and registration procedure, address the Principal, University High School, Minneapolis 14.

Students registered in Ed.T. 52 will be assigned to observation and student teaching in the classes of the high school. The facilities of the school are available to the college classes in special methods and to other classes for demonstration purposes. (I, II, III, IV MTWThF)

Summer Demonstration Elementary School

An elementary school, grades one to six inclusive, will be in operation during the first term of the Summer Session. This school will be staffed by the principal and teachers of the Tuttle School which is used as the demonstration elementary school of the College of Education by a cooperative agreement with the Board of Education of the city of Minneapolis. The school, conducted on an activity basis, may be observed by students of elementary school methods and supervision. A laboratory course in elementary school practices is available. (See Ed.C.I. 186) (I, II, III, IV MTWThF; Tuttle School, Talmage Avenue and Eighteenth Avenue Southeast)

Child Study Center

The Child Study Center will be in operation during both terms of the Summer Session for purposes of training, research, and service. During both terms, remedial reading classes will be operated for children who have been previously diagnosed and for whom special remedial work has been recommended. These children will attend school three hours daily, Monday through Friday, with one hour per day being used for individualized instruction. In addition, the Child Study Center will provide diagnosis and recommendation for school problem cases from the state during the summer, on the same basis as during the school year. The services of the Center, including the remedial reading classes and clinical work, will provide demonstrations for various College of Education classes, as well as clinical practice opportunities for advanced students registered under Ed.Psy. 150. Information may be obtained from the Director, Child Study Center, Pattee Hall, University of Minnesota, Minneapolis 14.

Nursery School and Kindergarten

The Institute of Child Welfare maintains a nursery school and kindergarten in the first term of the Summer Session which is open to children under the conditions described on page 127. These schools are also available for demonstration and observation. Courses, offered by the institute and listed on page 127, are given for teachers who wish nursery school and kindergarten training and for others interested in child development.

Minimum Fee for Graduate Students

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

Course Fees

A fee of \$1.50 per credit is charged for all courses concerned with methods or problems of teaching. These fees are used in the provision of demonstration and practice facilities, and are charged for any course in this classification, whether or not observation is required for that particular course. The curriculum laboratory, the demonstration schools, and radio and visual materials are partially provided through these fees.

A double dagger (‡) indicates courses for which course fees are charged. See Course Fees, pages 14-17.

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 pages 18-19.)

GENERAL COURSES

Second Term

Ed.81. Introduction to Education for Public Health Nurses. Not open to candidates for a degree in the College of Education. (3 cred.; VI MTWThF; 129MH) Ar.

AGRICULTURAL EDUCATION

First Term

Agr.Ed.82.‡ Methods in Teaching Agriculture. Fundamentals of teaching methods as related to vocational agriculture at the secondary school level. Use of the Minnesota Vo-Ag Planning and Record Book. Determining needs and organizing learning experiences based on the FFA program of work. Problems of evaluation. Observation and participation in learning-teaching situations. (3 cred.; jr., sr.; prereq. 81; II MTWThF; 301Hort[StP]) Kitts

Agr.Ed.151. Organization and Management. This course is designed for employed or qualified teachers of vocational agriculture. Special emphasis will be placed on supervision of farming programs of students, discovering and utilizing placement opportunities, parent-son agreements in farming activities, continuing education in young farmer classes for out-of-school youth, and directed or supervised practice in young farmer classes. (3 cred.; prereq. cons. of instr.; VI-IX MT, I F; 301Hort[StP]) Kitts

Agr.Ed.161. Vocational Education in Agriculture. This course is designed for state supervisors and assistant state supervisors of agricultural education, itinerant teacher trainers, supervising teachers in practice teaching centers, and those individuals preparing for administrative and supervisory positions in agricultural education. Special emphasis will be placed on techniques of supervision of state programs, directing the further development and improvement of state programs, evaluating programs of state supervision, and evaluating local programs of agricultural education. (3 cred.; prereq. cons. of instr.; VI-IX WTh, II F; 301Hort[StP]) Peterson

- Agr.Ed.165. Techniques of Instruction in Mechanized Farming.** A study of the problems and opportunities in teaching resulting from the mechanization and electrification of agriculture. Farm and home improvements, rural sanitation, farm power and machinery, electricity on the farms, soil and water management. Teaching aids and implications for programs of rural education. (3 cred.; prereq. cons. of instr.; III-IV MTWThF; 301Hort[StP]) Kugler
- Agr.Ed.165A. Laboratory in Techniques of Instruction in Mechanized Farming.** Developing specific programs of instruction in mechanized farming. Facilities and materials, the farm shop, mechanized farming instruction for the adult, young farmer, and high school classes. (3 cred.; prereq. concurrent registration in Agr.Ed. 165; ar.) Kugler
- Agr.Ed.221. Field Problems.** Provision for study and development of special problems in the field of the student's individual choice. (3 cred.; grad.; ar.) Peterson, Kitts
- Agr.Ed.232.* Research in Agricultural Education.** Investigation in problems of education for farm people. Selecting research problems, preparing bibliographies, analyzing and interpreting data, and preparing manuscripts. Designed especially for those meeting the Plan B requirement. (3 to 9 cred.; grad.; ar.) Peterson, Kitts

Second Term

- Agr.Ed.91.‡ Supervised Teaching Experience.** Supervision and participation in the learning-teaching process. Teaching experience and program analysis under supervision of selected teachers. Organization and execution of activities necessary to successful teaching of agriculture in Minnesota high schools. (6 cred.; ar.; ar.) Kitts
- Agr.Ed.221. Field Problems.** (See first term) Peterson, Kitts
- Agr.Ed.232.* Research in Agricultural Education.** (See first term) Peterson, Kitts

ART EDUCATION

The Department of Art Education offers professional training and guidance for teaching and supervisory positions in the field of art. The Art Education curriculum provides opportunities to combine a creative art career with a teaching position, a combination popular with many outstanding contemporary artists. The department also provides courses for general teachers who will integrate art with other educational experience.

First Term

- ArtEd.17. Survey of Art in Life and Education.** For elementary, child welfare, and other education majors. A combination lecture and laboratory course for the layman, designed to develop understanding and appreciation of aspects of art important in contemporary life and education. (3 cred.; no prereq.; I-II MTWThF; 109J) Gayne
- ArtEd.184.‡ Advanced Course in the Teaching and Supervising of Art in the Elementary School.** (3 cred.; sr., grad.; prereq. Ed. 55A-B or Ed. 71A-B-C, or cons. of instr.; IV MTWThF; 109J; and observation in Tuttle Demonstration School) Gayne
- ArtEd.189. Application of Esthetic Theory in Education.** Examination of contemporary theories of art, their psychological and philosophical foundations as revealed through experimental evidence. Application of tested principles of art education to improving programs of modern general education at elementary, secondary, and college levels. Open to teachers, supervisors, and administrators with or without previous experience in art who are concerned with making art function in general education. (3 cred.; VI MTWThF; 109J) Hastie

ArtEd.295. Problems in Art Education. The content of this course is determined by the individual specialization and creative projects selected. These projects may include advanced studio practice or technical solution of problems involving research or reading in a chosen field. Registration by special cons. of major adviser. (Cred. ar.; grad.; ar.) Gayne and staff

Second Term

ArtEd.19. Survey of Art in Life and Education. (See Art.Ed. 17 first term) (3 cred.; no prereq.; I-II MTWThF; 109J) Gayne

ArtEd.81. Puppetry in Art Education Programs. (A combination of 81A-B) The use of various forms of simple puppetry as a teaching technique with emphasis on problems of motivation and correlation with school subjects. Construction, manipulation, and stage techniques approached as they relate to typical school situations. (3 cred.; VI-VII MTWThF; 109J) Page

ArtEd.84.† Teaching of Art in the Elementary School. (Required of elementary education majors) The place and content of art in the curriculum of the elementary school. Appropriate methods for securing optimum educational outcomes from art activities. Demonstration lessons provide a realistic basis for discussion of important problems in the teaching of art. (3 cred.; III MTWThF; 109J) Page

ArtEd.295. Problems in Art Education. (See first term) (Cred. ar.) Gayne and staff

EDUCATIONAL ADMINISTRATION

First Term

GENERAL COURSES

Ed.Ad.124. Public School Administration. The organization, administration, and general support of public schools in state and local school districts. (3 cred.; sr., grad.; prereq. 10 hrs. in ed.; I MTWThF; 211NH) Openheimer

Ed.Ad.210.* Financial Aspects of School Business Administration. Financial program planning, budgeting, accounting, cost finding, income and expenditure control, and the preparation and analysis of financial reports. (3 cred.; grad.; prereq. 124 and 125 or 225; II MTWThF; 218P) Swenson

Ed.Ad.225. Pupil Personnel Administration. Child accounting records and reports, attendance department, school census, pupil adjustment and progress, pupil health and safety, and legal aspects of pupil personnel administration. (3 cred.; grad.; prereq. 15 hrs. in ed. including 124; III MTWThF; 213NH) Cramer

Ed.Ad.226. School Plant Planning and Management. Plant program planning and financing, including operation and maintenance of public school buildings. (3 cred.; grad.; prereq. 124 and 125 or 225; I MTWThF; 115Psy) Putnam

Ed.Ad.227. Teacher and Employee Administration. Employment practices, salary schedules, personnel records and reports, welfare procedures, improvement in service and legal aspects of instructional and noninstructional school employee administration. (3 cred.; grad.; prereq. 15 hrs. in ed. including 124; IV MTWThF; 221Bu) Swenson

Ed.Ad.228.* Special Problems in Educational Administration. For the summer of 1950 this course will deal with recent research in the field of school administration. Superintendents may work on research problems in connection with their own school systems. (1 to 6 cred.; grad.; prereq. 124, 125; II Th; 115TNM) Neale

Ed.Ad.235. Seminar in Educational Administration. Required of all candidates for Master's degrees under Plan A and for all Ph.D. degree candidates with a major in general school administration. (No cred.; prereq. cons. of instr.; time and place ar.) Neale

ELEMENTARY EDUCATION

- Ed.Ad.115. Organization of the Elementary School.** Problems relating to the organization for instruction and classification of pupils in elementary schools with critical examination of current practices. (3 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.; I MTWThF; 2P) Cramer

SECONDARY EDUCATION

- Ed.Ad.133. Basic Procedures in Student Personnel Work.** (Also listed as Ed.Psy. 133) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; III MTWThF; NHAud) Shaw
- Ed.Ad.218. Recent Literature in Secondary Education.** (No cred.; seminar for grad. students; VI TTh; 112Bu) Boardman
- Ed.Ad.264. Administration of the Instructional Activities of the Secondary School.** (3 cred.; grad.; IV MTWThF; 6F) Stout
- Ed.Ad.265. Administration of the Noninstructional Activities of the Secondary School.** (3 cred.; grad.; IV MTWThF; 201WuH) Romine
- Ed.Ad.270.* Special Problems in Secondary Education.** (Cred. ar.; prereq. cons. of instr.; VI TTh; 112Bu) Boardman, R. Keller

HIGHER EDUCATION

- Ed.Ad.274. The Junior College.** (3 cred.; grad.; III MTWThF; 201WuH) R. Keller

Second Term

GENERAL COURSES

- Ed.Ad.124. Public School Administration.** (See first term) (I MTWThF; 207NH) Farley
- Ed.Ad.210.* Financial Aspects of School Business Administration.** (See first term) (I MTWThF; 2F) Putnam
- Ed.Ad.225. Pupil Personnel Administration.** (See first term) (III MTWThF; 110P) Cramer
- Ed.Ad.226. School Plant Planning and Management.** (See first term) (III MTWThF; 115Psy) Putnam
- Ed.Ad.227. Teacher and Employee Administration.** (See first term) (III MTWThF; 8F) Ar.
- Ed.Ad.228.* Special Problems in Educational Administration.** (See first term) (II Th; 115TNM) Neale
- Ed.Ad.230.* Public Relations for Schools.** (3 cred.; grad.; IV MTWThF; 102F) Farley
- Ed.Ad.235. Seminar in Educational Administration.** (See first term) (Time and place ar.) Neale

ELEMENTARY EDUCATION

- Ed.Ad.115. Organization of the Elementary School.** (See first term) (I MTWThF; 308F) Cramer

SECONDARY EDUCATION

- Ed.Ad.133. Basic Procedures in Student Personnel Work.** (See first term) (I MTWThF; 211NH) Hagenah
- Ed.Ad.263. Organization of the Secondary School.** (3 cred.; grad.; IV MTWThF; 207NH) Waskin
- Ed.Ad.264. Administration of the Instructional Activities of the Secondary School.** (See first term) (II MTWThF; 112Bu) Waskin
- Ed.Ad.270.* Special Problems in Secondary Education.** (See first term) Ar.

CURRICULUM AND INSTRUCTION

First Term

GENERAL COURSES

- Ed.C.I.101.‡ Driver Education.** Materials and methods for driver education; building a plan for driver education for a specific school; behind-the-wheel training. Valid Minnesota driver's license required. Content planned to meet requirements of State Department of Education for driver education in the schools. (Limited to twenty-four students) (2 cred.; no prereq.; 1:00 to 5:00 p.m. June 19 to June 30; 100NH) Strasser, Sandell
- Ed.C.I.105.‡ Visual Aids in Teaching.** (3 cred.; jr., sr., grad.; II MTWThF; 101WeH) Whiting
- Ed.C.I.106.‡ Coordinating of Visual Education Programs.** (3 cred.; jr., sr., grad.; III MTWThF; 206WeH) Wendt
- Ed.C.I.112.‡ Materials and Procedures in Marriage and Family Life Education.** (See page 98) (Limited to thirty students) (3 cred.; sr., grad.; admission by advance application to dean's office, College of Education, and cons. of instr.; VI MTWThF; 253TSF) Dyer
- Ed.C.I.129.‡ Principles and Problems of Teaching Social Hygiene.** Emphasis will be placed on methods of teaching social hygiene in the public schools and materials for instructional use in the elementary and secondary schools. (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed.; III MTWThF; 360SBH) Pearce, Griffiths, Smith
- Ed.C.I.145.‡ Remedial Reading.** (3 cred.; prereq. course in reading or basic training in counseling or school psychological work; IV MTWThF; 210P) Fay
- Ed.C.I.172.‡§ Workshop in Curriculum Problems.** Curriculum development and problems at the elementary and secondary levels with group and individual projects planned to meet the special needs and interests of participants. Consultants will include specialists in the work of the kindergarten and the primary grades, the elementary schools, and the junior and senior high schools. Intergroup education and problems in human relations in student groups will be particularly emphasized in general sessions, with consultants available for participants wishing to carry on study projects in this area. Admission by consent of the directors. (Limited to 125 students) (See page 97.) (9 cred.; 9:00 to 4:00, June 16 to July 21; Marshall High School) Bossing, Cary, Hovet, Casey, Noar, Rogers, Skeen, visiting lecturers and consultants.
- Ed.C.I.174‡-175‡-176.‡ Clinical Methods and Practice in Speech Pathology.** (3 cred. each; prereq. Sp. 61, 67, 85, 162, 163, or concurrent registration; ar.; ar.) Bryngelson
- Ed.C.I.205.*‡ Problems in Visual Education.** (Cred. ar.; ar.) Wendt
- Ed.C.I.271.*‡ Problems in Curriculum Construction.** (Cred. ar.; prereq. cred. or concurrent enrolment in 113, 119, 170, or equiv., and cons. of instr.; ar.) Bossing, Cook, Cary, D. Johnson
- Ed.C.I.273.*‡ Problems in Reading.** (Cred. ar.; prereq. cons. of instr.; ar.) Bond, Fay

ELEMENTARY EDUCATION

- Ed.C.I.63.‡ Children's Literature.** (3 cred.; I MTWThF; 166Ph) Reid
- Ed.C.I.102.‡ Teaching the Social Studies in the Elementary School.** (3 cred.; prereq. Ed. 71A-B-C or equiv.; III MTWThF; 201WeH) Wronski
- Ed.C.I.103.‡ Teaching of Science in the Elementary School.** Emphasis on resources and materials, and their application in the elementary grades. 3 cred.; sr., grad.; prereq. Ed. 71A-B or teaching experience; IV MTWThF; 301F) Boeck

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

- Ed.C.I.119.‡ Elementary School Curriculum.** (3 cred.; sr., grad.; prereq. Ed. 71C or equiv.; II MTWThF; 166Ph) Reid
- Ed.C.I.130.‡ Problems in Childhood Education.** Lectures and readings on the philosophy and current methods of early childhood education. (3 cred.; sr., grad.; prereq. 12 cred. in ed.; IV MTWThF; 109F) Fuller
- Ed.C.I.143.‡ Teaching and Supervision of Reading in the Elementary School.** (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 71A or equiv.; III MTWThF; 211NH) Bond
- Ed.C.I.149.‡ The Teaching and Supervision of Arithmetic in the Elementary School.** (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 55B or 71A; II MTWThF; NHAud) Brueckner
- Ed.C.I.150.‡ Supervision and Improvement of Instruction.** (3 cred.; sr., grad.; prereq. Ed. 71C or equiv.; IV MTWThF and V W; 211NH) Brueckner
- Ed.C.I.153.‡ Supervision and Teaching of English in the Elementary Schools.** (3 cred.; sr., grad.; prereq. Ed. 71A-B-C or equiv.; IV MTWThF; 110F) Archer
- Ed.C.I.162.‡ Laboratory in Nursery School and Kindergarten Instructional Practices.** Open to experienced teachers; other professional workers admitted by special permission. (3 cred.; VII MW and hrs. ar.; 202Pt) Fuller, Headley
- Ed.C.I.163.‡ Plastic Materials, Story Telling, and Social Studies for Young Children.** Open to experienced teachers; other professional workers admitted by special permission. (3 cred.; VI MTWThF and observation hrs. ar.; 202Pt) Headley
- Ed.C.I.186.‡ Laboratory in Elementary Instructional Practices.** Daily observation of elementary classes with discussion of techniques, emphasis on activity units, visual aids, enriched materials, individual differences, and socialized situations. Students enrolling in this course must carry at least one other course in the College of Education. (2 cred.; experienced teachers only; observation 4 hrs. weekly ar. MTWThF, Tuttle School; lect. VI TTh, 308F) Staudenmaier
- Ed.C.I.261.*‡ Special Problems in the Improvement of Instruction.** (Cred. ar.; prereq. cons. of instr.; I MTWThF; 207NH) Brueckner

SECONDARY EDUCATION

- Ed.C.I.113.‡ High School Curriculum.** (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 55A-B or equiv.; VII MTWThF; 112Bu) Romine
- Ed.C.I.122.‡ Literature for Adolescents.** (3 cred.; jr., sr., grad.; prereq. Ed. 55B or junior-senior high school teaching experience; I MTWThF; 206WeH) D. Smith
- Ed.C.I.125.‡ Occupational Information Laboratory.** (Limited to ten students) (1 cred.; sr., grad.; prereq. cons. of instr.; ar.; 103UHS) Carlson
- Ed.C.I.131.‡ Advanced Course in Teaching Technical Business Subjects in Secondary Schools.** (3 cred.; sr., grad.; II MTWThF; 108F) Ar.
- Ed.C.I.135.‡ Group Procedures in Guidance.** (Limited to 35 students) (3 cred.; sr., grad.; prereq. Ed.Psy. 133 or cons. of instr.; IV MTWThF; 115TSMa) Hewer
- Ed.C.I.137.‡ Materials and Methods in Distributive Education Programs.** (3 cred.; sr., grad.; II MTWThF; 109Psy) Determan
- Ed.C.I.139.‡ Coordination Techniques in Business Education.** (3 cred.; sr., grad.; III MTWThF; 103F) Meyer
- Ed.C.I.141.‡ Cooperative Part-Time Distributive Education Programs.** (3 cred.; sr., grad.; prereq. cons. of instr.; I MTWThF; 103F) Meyer
- Ed.C.I.142.‡ Evening Distributive Education Classes.** (3 cred.; sr., grad.; VII-VIII MTWThF, July 3-21; 2F) Latterell

- Ed.C.I.144.‡ Teaching of Reading in Junior and Senior High Schools.** (3 cred.; sr., grad.; prereq. 9 hrs. in ed. including Ed. 55B; II MTWThF; 311MurH) Fay
- Ed.C.I.154.‡ Materials and Methods in Adult Distributive Education Classes.** (3 cred.; sr., grad.; prereq. cons. of instr.; VII-VIII MTWThF, June 12 to June 30; 2F) Fairbrother
- Ed.C.I.156.‡ Trends in Business Education.** (3 cred.; sr., grad.; IV MTWThF; 218P) Ar.
- Ed.C.I.167.‡ Workshop in Economic Education.** (See page 98) (Limited to 70 students) (4 cred.; sr., grad.; admission only on approval of dean's office, College of Education, with advance application required; ar. MTWThFS, June 26 to July 15; ar.) Price, Wright, and visiting consultants
- Ed.C.I.188.‡ Advanced Course in the Teaching of Modern Languages.** Much new material has been gathered in the last few years. New techniques for specific objectives, intensive courses under varying conditions, and new methods of approach both in theory and practice will be taken up in this course. Special attention will be given to the following: the reorganization of the modern language curriculum; the role of the language teacher as a resource person; the development of the resource unit; the use of audio-visual aids; the language club; the evaluation program with emphasis on oral-aural testing; the development of attitude and appreciation scales; and practical techniques in the classroom. Students will have access to the valuable reference library, to teaching materials, and to the realia collection in the College of Education Modern Language Curriculum Library. Demonstrations will be provided by University High School language students. Open to teachers, prospective teachers, and to registrants in any of the language institutes. (3 cred.; sr., grad.; IX MTWThF; 110UHS) Birkmaier
- Ed.C.I.191.‡ Advanced Course in the Teaching of Secondary School Mathematics.** (3 cred.; prereq. Ed. 55B or cons. of instr.; VII MTWThF; 105UHS) D. Johnson
- Ed.C.I.199E.‡ Internship.** (Cred. ar.; grad.; available for M.Ed. students in recreation; ar.) Fitzgerald
- Ed.C.I.225.*‡ Special Problems in Supervision of Instruction in Secondary Schools.** (Cred. ar.; grad.; VI TTh; 112Bu) Boardman, R. Keller
- Ed.C.I.238.*‡ Problems in Distributive Education.** (Cred. ar.; grad.; prereq. cons. of instr.; ar.) Meyer
- Ed.C.I.239.*‡ Problems in Business Education.** (Cred. ar.; grad.; ar.) Price
- Ed.C.I.266.‡ Supervision of High School Instruction.** (3 cred.; grad.; III MTWThF; 202WuH) Boardman
- Ed.C.I.287.‡ Advanced Course in the Teaching of Science.** (3 cred.; sr., grad.; prereq. Ed. 55B; II MTWThF; 201WuH) P. Johnson
- Ed.C.I.294.*‡ Advanced Course in Methods of Teaching English.** (3 cred.; prereq. Ed.T.66A-B-C or equiv.; III MTWThF; 218P) D. Smith
- Ed.C.I.296.*‡ Special Problems in Teaching English.** (Cred. ar.; prereq. cons. of instr.; ar.; ar.) D. Smith

HIGHER EDUCATION

- Ed.C.I.228.*‡§ Workshop: Problems of Higher Education and Teacher Training.** (6 cred.; grad.; June 12 to July 8, ar. MTWThF; CCS) Cooper, Eckert, Kreider, and consultants
- Ed.C.I.250.‡ Higher Education in the United States.** (3 cred.; grad.; prereq. 18 hrs. in ed. or cons. of instr.; I MTWThF; 301F) Eckert
- Ed.C.I.252.‡ Effective College Teaching.** (3 cred.; grad.; prereq. 18 hrs. in ed. or cons. of instr.; II MTWThF; 211NH) Oppenheimer

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

Second Term

GENERAL COURSES

- Ed.C.I.105.‡ **Visual Aids in Teaching.** (See first term) (II MTWThF; 101WeH) Luce
- Ed.C.I.107.‡ **Radio in Education.** (3 cred.; jr., sr., grad.; III MTWThF; 302MurH) Tyler
- Ed.C.I.109.‡ **Audio-Visual Materials and Equipment Laboratory.** (3 cred.; pre-req. 105 or cons. of instr.; IV MTWThF; 6WeH) Luce
- Ed.C.I.117.‡ **Rural Education for Administrators and Teachers.** (3 cred.; sr., grad.; prereq. consult instr.; II MTWThF; 303-304HE[StP]) Archer
- Ed.C.I.133.‡ **Consumer Education in the Schools.** (3 cred.; sr., grad.; I MTWThF; 115Psy) Price
- Ed.C.I.145.‡ **Remedial Reading.** (See first term) (IV MTWThF; 112Bu) Tinker
- Ed.C.I.207.*‡ **Problems in Radio Education.** (1 to 3 cred.; ar.) Tyler
- Ed.C.I.271.*‡ **Problems in Curriculum Construction.** (See first term) Cook, D. Johnson, ar.
- Ed.C.I.273.*‡ **Problems in Reading.** (See first term) (III T and ar.; 117Psy) Tinker

ELEMENTARY EDUCATION

- Ed.C.I.102.‡ **Teaching of the Social Studies in the Elementary School.** (See first term) (I MTWThF; 2P) Wronski
- Ed.C.I.103.‡ **Teaching of Science in the Elementary School.** (See first term) (VI MTWThF; 111Bu) Boeck
- Ed.C.I.119.‡ **Elementary School Curriculum.** (See first term) (II MTWThF; 308MurH) Goossen
- Ed.C.I.143.‡ **Teaching and Supervision of Reading in the Elementary School.** (See first term) (III MTWThF; NHAud) Fay
- Ed.C.I.150.‡ **Supervision and Improvement of Instruction.** (See first term) (IV MTWThF; 301F) Goossen
- Ed.C.I.152.‡ **Adjustment of Schools to Individual Differences.** (3 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.; I MTWThF; 145Ph) Van Wagenen
- Ed.C.I.187.‡§ **Workshop in Rural and Village School Problems.** Students in the workshop must also be registered for Ed.C.I. 117, Rural Education for Administrators and Teachers, 3 cred., which will be used as a core course in connection with the workshop. Special group and individual projects in the workshop will supplement the core course, emphasizing the problems of the registrants and the improvement of rural teaching. (Limited to 30 students) (6 cred.; prereq. cons. of dean, College of Education; not open to those who have received cred. in 187 or 188 in previous sessions; 10:00 to 4:00 MTWThF; 303-304HE[StP]) Archer, Bowen

SECONDARY EDUCATION

- Ed.C.I.113.‡ **High School Curriculum.** (See first term) (II MTWThF; 166Ph) Ar.
- Ed.C.I.134.‡ **Materials and Methods in Consumer Education.** (3 cred.; prereq. 133 or cons. of instr.; III MTWThF; 103F) Price
- Ed.C.I.136.‡ **Organization and Supervision of Distributive Education Programs.** (3 cred.; sr., grad.; II MTWThF; 213TNUH) Meyer
- Ed.C.I.139.‡ **Coordination Techniques in Business Education.** (See first term) (IV MTWThF; 103F) Meyer
- Ed.C.I.140.‡ **Teaching of Speech.** (3 cred.; jr., sr., grad.; prereq. Sp. 1-2-3 or Sp. 5-6 or equiv. or cons. of instr.; II MTWThF; 8F) Smith

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

- Ed.C.I.170B.‡ Curriculum Construction in Secondary Schools.** (3 cred.; prereq. 113 or 119; I MTWThF; 103F) Ar.
- Ed.C.I.199E.‡ Internship.** (See first term) Fitzgerald
- Ed.C.I.238.*‡ Problems in Distributive Education.** (See first term) Meyer
- Ed.C.I.239.*‡ Problems in Business Education.** (See first term) Price
- Ed.C.I.266.‡ Supervision of High School Instruction.** (See first term) (III MTWThF; 111Bu) Umstadd

HIGHER EDUCATION

- Ed.C.I.228.*‡§ Workshop: Problems of Higher Education and Teacher Training.** (See first term) (July 31 to August 25; ar. MTWThF; CCS) Grim, Hill, Jacobs, Mahan, Mork, Potthoff, Umstadd, and consultants

EDUCATIONAL PSYCHOLOGY

First Term

GENERAL COURSES

- Ed.Psy.60. Introduction to Statistical Methods.** (3 cred.; jr., sr.; prereq. 6 cred. in psy.; VII MTWThF; 106NH) Hoyt
- Ed.Psy.120. Basic Principles of Measurement.** (3 cred.; sr., grad.; prereq. 60 or equiv.; VI MTWThF; 106NH) Hoyt
- Ed.Psy.125. Social Structure of Student Groups.** A survey of available literature on group dynamics emphasizing social-psychological aspects of group learning situations and instructional method; application of selected concepts and theories by group experimentation. (Limited to thirty students) (3 cred.; sr., grad.; IV MTWThF; 2F) Flanders
- Ed.Psy.140. Instruments and Techniques of Measurement.** (3 cred.; sr., grad.; prereq. 120 or equiv.; IV MTW and V-VI ThF; 213NH) Cook
- Ed.Psy.143.‡ Advanced Individual Mental Testing.** Development of proficiency in administering and interpreting three or four selected individual mental tests. Seminar for discussion of all tests being used by the entire group. (3 cred.; sr., grad.; prereq. 142 and cons. of instr.; VII-VIII WTh and hrs. ar.; 111Bu) Delp
- Ed.Psy.150.‡ Psychoeducational Clinic.** A practice course for students with background in individual mental testing or remedial reading. Work with cases in the Child Study Center and in other agencies. (2 to 6 cred.; sr., grad.; prereq. 142 or Ed.C.I. 145 and cons. of instr.; V W and hrs. ar.; 108Pt) Bond, Delp, Fay
- Ed.Psy.159. Personality Development and Mental Hygiene.** (3 cred.; sr., grad.; prereq. 9 hrs. in ed. and psy. including one recent course in psy.; I MTWThF; 202WuH) Bedell
- Ed.Psy.182. Education of Exceptional Children.** Overview of the field of special education at all levels and for all degrees of exceptionality. Especially for classroom teachers, counselors, supervisors, and administrators; also the initial course for students working for special class certificates. Reports on individual work equivalent to one credit. (3 cred.; sr., grad.; prereq. Ed. 55B or 71C or equiv.; VI WThF; 111Bu) Delp
- Ed.Psy.216. Statistical Methods in Education.** (3 cred.; grad.; I MTWThF; 201WuH) P. Johnson, Moonan
- Ed.Psy.216a.‡ Statistical Methods in Education Laboratory.** (Limited to fifteen students) (2 cred.; grad.; concurrent reg. in 216; VII-VIII MWF; 5ShH) Moonan

§ Graduate students planning to register for any workshop should consult their advisers concerning the possibility of using credit for the workshop in their graduate program.

- Ed.Psy.225.*** *Diagnosis and Counseling in a Student Personnel Program.* (3 cred.; grad.; prereq. 133 and 140 or cons. of instr.; III MTWThF; 6F) Bedell
- Ed.Psy.233.*** *Problems in Guidance and Personnel Work.* (Cred. ar.; grad.; prereq. cons. of instr.; individual work ar.) Wrenn
- Ed.Psy.253.*** *Research Problems.* (Cred. ar.; grad.; prereq. cons. of instr.; individual work ar.) Cook, P. Johnson, Delp, Hoyt
- Ed.Psy.290.** *Individual Differences.* A study of group and individual differences and their relations to educational practice. (3 cred.; grad.; II MTWThF; 2F) Flanders
- Ed.Psy.293.*** *Psychology of Learning.* (3 cred.; grad.; prereq. 12 cred. in psy. and ed. psy.; VI MTWThF; 101WeH) Mork

SECONDARY EDUCATION

- Ed.Psy.133.** *Basic Procedures in Student Personnel Work.* (Also listed as Ed.Ad. 133) (3 cred.; sr., grad.; prereq. 9 cred. in ed.; III MTWThF; NHAud) Shaw
- Ed.Psy.282.** *Practice in Secondary School Personnel Work.* (3 cred.; prereq. cons. of instr.; individual assignments ar.; ar.) Carlson

HIGHER EDUCATION

- Ed.Psy.250.** *College Student Personnel Work—Development and Administration.* For present and prospective college personnel workers, teachers, and administrators. The place of the student personnel program in the institution and the administration of that program. (3 cred.; grad.; IV MTWThF; 103NH) Wrenn

Second Term

GENERAL COURSES

- Ed.Psy.60.** *Introduction to Statistical Methods.* (See first term) (II MTWThF; 143Ph) Van Wagenen
- Ed.Psy.120.** *Basic Principles of Measurement.* (See first term) (II MTWThF; 213NH) Cook
- Ed.Psy.150.‡** *Psychoeducational Clinic.* (See first term) (II T and hrs. ar.; 108Pt) Tinker, Delp
- Ed.Psy.159.** *Personality Development and Mental Hygiene.* (See first term) (IV MTWThF; 209NH) W. Johnson
- Ed.Psy.182.** *Education of Exceptional Children.* (See first term) (VI WThF; 112Bu) Delp
- Ed.Psy.208.*** *Methods in Educational Research.* (3 cred.; grad.; II MTWThF; 201WuH) P. Johnson
- Ed.Psy.217.‡** *Statistical Methods in Education.* (3 cred.; grad.; I MTWThF; 201WuH) P. Johnson, Moonan
- Ed.Psy.217a.‡** *Statistical Methods in Education Laboratory.* (Limited to fifteen students) (2 cred.; grad.; concurrent reg. in 217; VII-VIII MWF; 5ShH) Moonan
- Ed.Psy.226.*** *Diagnosis and Counseling in a Student Personnel Program.* (3 cred.; grad.; prereq. 133, 140, and 225 or cons. of instr.; II MTWThF; 5F) W. Johnson
- Ed.Psy.233.*** *Problems in Guidance and Personnel Work.* (See first term) (Individual work ar.) Edwards, W. Johnson
- Ed.Psy.253.*** *Research Problems.* (See first term) Cook, P. Johnson, Delp, Van Wagenen
- Ed.Psy.293.*** *Psychology of Learning.* (See first term) (VI MTWThF; 209NH) Mork

SECONDARY EDUCATION

Ed.Psy.133. Basic Procedures in Student Personnel Work. (See first term)
(I MTWThF; 211NH) Hagenah

HISTORY AND PHILOSOPHY OF EDUCATION

First Term

GENERAL COURSES

H.Ed.141. Clinical Issues in Contemporary Education. (3 cred.; sr., grad.; no prereq.; not open to students who have completed 176; II MTWThF; 321F) Axtelle

H.Ed.155. History of Public Education in the United States. (3 cred.; jr., sr., grad.; III MTWThF; 2F) Alexander

H.Ed.180. The School and the Social Order. (3 cred.; jr., sr., grad.; prereq. 6 hrs. in psy.)

Sec. 1, III MTWThF, 301F, Axtelle Sec. 2, VI MTWThF, 209NH, Sutton

H.Ed.241.* Problems in the History and Philosophy of Education. (Cred. ar.; prereq. cons. of instr.; ar.) Cary, Alexander, Sutton

Second Term

GENERAL COURSES

H.Ed.141. Critical Issues in Contemporary Education. (See first term) (II MTWThF; 209NH) Sutton

H.Ed.180. The School and the Social Order. (See first term) (III MTWThF; 213NH) Sutton

H.Ed.241.* Problems in the History and Philosophy of Education. (See first term) Sutton

HOME ECONOMICS EDUCATION

First Term

H.E.Ed.191. Advanced Course in the Teaching of Home Economics. A study of materials, equipment, and teaching procedures based on newer concepts of learning and changing social and economic needs of families. The course offers the inexperienced teacher an opportunity to study problems related to her own situation at the secondary or higher educational level. (3 cred.; sr., grad.; prereq. 91, 93, or cons. of instr.; I MTWThF and 1 hr. ar.; 114HE[StP]) Ford

H.E.Ed.192. Evaluation in Home Economics Education. 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 evaluation instruments. Study of elementary statistical techniques useful to home economics teachers. (3 cred.; sr., grad.; prereq. 91, Ed. 55A-B; IV MTWThF and 1 hr. ar.; 114HE[StP]) Arny

H.E.Ed.193B. Home Economics Curriculum. (College level) The place of home economics in higher education; problems facing home economics in small colleges; curriculum offerings; teaching schedules and load; appropriate reference materials. (3 cred.; sr., grad.; prereq. cons. of instr.; VII MTWThF and 1 hr. ar.; 114HE[StP]) Arny

H.E.Ed.194A. Adult Education in Home Economics. A study of problems affecting family and community living; teaching procedures used to help out-of-school youth and adults meet problems. Planned for teachers of adults and extension workers. (3 cred.; sr., grad.; prereq. 91, 93; V MTWThF and 1 hr. ar.; 114HE[StP]) Ford

H.E.Ed.295. Seminar in Home Economics Education. Discussion and reports on current problems in home economics education. Special emphasis on the philosophy, principles, and procedures in supervision of student teachers and teachers in service. (3 cred.; grad. only; prereq. cons. of instr.; III MTWThF and 1 hr. ar.; 114HE[StP]) Rose

INDUSTRIAL EDUCATION

First Term

- Ind.3‡ Shop Finishing.** (3 cred.; prereq. 1-2 or equiv.; III-IV MTWThF; 6Pt) Ar.
- Ind.5‡ Basic Drawing.** (3 cred.; no prereq.; III-IV MTWThF; 201TNUH) Anderson
- Ind.11.‡ Special-Class Woodwork.** (3 cred.; no prereq.; VI-VII MTWThF; 6Pt) Tinkham
- Ind.21.‡ Craft Work—B.** (3 cred.; prereq. 20 or equiv.; VI-VII MTWThF; 14, 15TNUH) Nelson
- Ind.50A†‡-B†-C.‡ Directed Teaching.** (Limited to 8 students) (3 cred.; any letter; prereq. 70, 80, with C+ average in ind. educ. and shop and drawing courses; days and hrs. ar.; 6APt) H. Smith
- Ind.102. The General Shop.** (Not a shop course) (3 cred.; prereq. 80 or equiv.; IV MTWThF; 202TNUH) Nelson
- Ind.107. Coordination.** (3 cred.; prereq. cons. of instr.; I MTWThF; 202TNUH) Widdowson
- Ind.110. Vocational Guidance.** (3 cred.; prereq. Ed. 55B or cons. of instr.; II MTWThF; 202TNUH) H. Smith
- Ind.115. Supervision of Industrial Education.** (3 cred.; prereq. sr. or cons. of instr.; III MTWThF; 202TNUH) Widdowson
- Ind.200.* Research Problems** (3-6-9 cred.; grad. only; individual conferences at IV MTWThF and by appointment; 101TNUH [office]) H. Smith
- Dunwoody—Shopwork and Drawing.** (24 clock hrs. per cred.; courses, cred., days and hrs. ar.; special form used) H. Smith

Second Term

- Ind.7.‡ Building Construction Drawing.** (3 cred.; prereq. 5-6 or equiv.; III-IV MTWThF; 201TNUH) W. Anderson
- Ind.16.‡ Advanced Graphic Arts.** (3 cred.; prereq. 15 or equiv.; I-II MTWThF; 14TNUH) Nelson
- Ind.20.‡ Craft Work—A.** (3 cred.; no prereq.; VI-VII MTWThF; 6Pt) W. Anderson
- Ind.50A†‡-B†-C.‡ Directed Teaching.** (See first term) (Limited to 6 students) (Days and hrs. ar.) Micheels
- Ind.80. Introduction to Industrial Arts.** (3 cred.; no prereq.; IV MTWThF; 202TNUH) Nelson
- Ind.103. Instructional Aids.** (3 cred.; prereq. 70 or 100 or equiv.; III MTWThF; 202TNUH) Tinkham
- Ind.135. Industrial Course Construction.** (3 cred.; jr., sr., grad.; not open to those with cred. in 40-42; II MTWThF; 202TNUH) Micheels
- Ind.200.* Research Problems.** (See first term) (105TNUH [office]) Micheels
- Dunwoody—Shopwork and Drawing.** (See first term) Micheels

† Students registering for this course must make out the application required for methods courses and directed teaching. Forms are available in the office of the director of student teaching, 206E Burton Hall.

Shop and Drawing—Both Terms

For courses, required or elective, in addition to those scheduled above, see other parts of this bulletin as follows: Agricultural Engineering, Art, Art Education, Drawing and Descriptive Geometry, Mechanical Engineering, and other divisions of the Institute of Technology. First degree candidates should keep in mind the maximum of 45 credits in shopwork and drawing combined. More credits may be earned and recorded, but they will not be counted toward requirements. Advanced students may enroll for such courses, also, but without possibility of their use in graduate programs.

Notes

Those who desire may obtain a copy of the four-year curriculum (B.S. degree) and a statement concerning patterns for Master's programs (M.A. and M.Ed.) by writing to the Department of Industrial Education, 103TNUH, University of Minnesota, Minneapolis 14. Those interested in the Ph.D. degree are invited to initiate correspondence or consultation about their educational and experience backgrounds together with their professional intentions.

The University of Minnesota is designated by the Minnesota State Board for Vocational Education for the offering of courses leading to certification for positions federally and state aided under the Smith-Hughes, George-Barden and allied acts and regulations.

METHODS AND DIRECTED TEACHING

First Term

NURSING EDUCATION

Ed.T.51A.‡ Special Methods of Directed Teaching in Schools of Nursing. (2 cred.; sr., grad.; prereq. 69, Ed. 55B; open only to students who will also be registered for 2 cred. in this course in the second term; see instr.; VI MWF; 2309PoH) Boyle

ELEMENTARY EDUCATION

Ed.T.77.†† Teaching in the Nursery School. Five half-days each week spent in classroom participation under supervision. (4 cred.; sr.; prereq. 55, 56, 57, and 58 plus cons. of instr.; ar.; ar.) Fuller

Ed.T.78.†† Teaching in the Kindergarten. Five half-days each week spent in classroom participation under supervision. (4 cred.; sr.; prereq. 55, 56, 57, and 58 plus cons. of instr.; ar.; ar.) Headley

SECONDARY EDUCATION

Ed.T.52.†† Student Teaching. Open only to students who need a limited number of credits in student teaching to graduate at the end of the first summer term or to students who wish to qualify for the junior high school endorsement. (Limited to 40 students) (Cred. ar.; prereq. cons. of instr.; ar. in UHS) Grim

Ed.T.66Am.‡ The Teaching of English in Secondary Schools. (3 cred.; sr.; VI MTWThF; 110UHS) Burton

Ed.T.67Am.‡ The Teaching of Secondary School Mathematics. (3 cred.; sr.; VI MTWThF; 105UHS) D. Johnson

Ed.T.68Am.‡ The Teaching of Secondary School Science. (3 cred.; sr.; VI MTWThF; 3UHS) Boeck

‡ Students registering for this course must make out the application required for methods courses and directed teaching. Forms are available in the office of the director of student teaching, 206E Burton Hall.

- Ed.T.69Am.‡** The Teaching of History and Social Studies. (3 cred.; sr.; VI MTWThF; 210UHS) Matlon
- Ed.T.84A-B-C.‡** Practice and Field Work in Recreation Leadership. (2 cred. for majors, 1 cred. for minors; jr.; ar.; ar.) Fitzgerald
- Ed.T.85A-B-C.‡** Practice and Field Work in Recreation Leadership. (2 cred. for majors, 1 cred. for minors; jr.; ar.; ar.) Fitzgerald

Second Term

NURSING EDUCATION

- Ed.T.51A.‡** Special Methods of Directed Teaching in Schools of Nursing. (See first term) (VI MWF; 2309PoH) Boyle

SECONDARY EDUCATION

- Ed.T.84A-B-C.‡** Practice and Field Work in Recreation Leadership. (See first term) Fitzgerald
- Ed.T.85A-B-C.‡** Practice and Field Work in Recreation Leadership. (See first term) Fitzgerald

MUSIC EDUCATION

First Term

- Mu.Ed.50A.‡** Teaching Music in the Primary Grades. (2 cred.; jr.; no prereq.; IV MTWTh; 4ScH) Winslow
- Mu.Ed.50B.‡** Teaching Music in the Intermediate Grades. (2 cred.; prereq. 50 or equiv.; III MTWTh; 4ScH) Winslow
- Mu.Ed.60.†‡61.‡62.‡** Supervision and Teaching of Music. (3 cred.; sr.; prereq. Ed. 55A-B, 50A,B, 53, and a C+ average in the major; VII-VIII W, 12 hrs. ar.; 103ScH) Winslow
- Mu.Ed.63.‡** Band Conducting. (2 cred.; prereq. 4-5-6; II MTWThF; 4NMA) Prescott
- Mu.Ed.64.‡** Band Organization. (3 cred.; sr.; prereq. 4, 5, 6; III MTWThF and 1 hr. ar.; 4NMA) Prescott
- Mu.Ed.103E.** Psychological Foundations in Music Education. (3 cred.; prereq. sr., cons. of instr.; II MTWThF; 4ScH) Winslow
- Mu.Ed.105E.** Advanced Topics in Instrumental Music Education. (3 cred.; prereq. cons. of instr.; IV MTWThF; 2ScH) Ivory
- Mu.Ed.110E.** Workshop in General Instrumental Music Education. (3 cred.; sr., grad.; prereq. 9 cred. in mu. ed. or cons. of instr.; I MTWThF; 4NMA) Ivory, Prescott
- Mu.Ed.224E.** Seminar and Individual Research Problems in Music Education. (2-6 cred.; grad.; prereq. cons. of instr.; ar.; ar.) Winslow
- Mu.Ed.225E.‡** Advanced Applied Music. (2-4 cred.; prereq. entrance exam.; ar.; ar.) Ar.

Second Term

- Mu.Ed.50A.‡** Teaching Music in the Primary Grades. (See first term) (II MTWTh; 4ScH) Winslow
- Mu.Ed.50B.‡** Teaching Music in the Intermediate Grades. (See first term) (III MTWTh; 4ScH) Winslow
- Mu.Ed.59.‡** Choral Literature and Conducting. (2 cred. sr., 1 cred. others; I MTWTh; 4ScH) Winslow
- Mu.Ed.65.‡** Instrumentation. (3 cred.; jr.; prereq. Mu. 6T; IV MTWThF and 1 hr. ar.; 2ScH) Ivory

† Students registering for this course must make out the application required for methods courses and directed teaching. Forms are available in the office of the director of student teaching, 206E Burton Hall.

- Mu.Ed.67. Teaching of Instrumental Music in the Elementary School.** (2 cred.; sr.; prereq. 65; I MTWTh; 2ScH) Ivory
- Mu.Ed.224E. Seminar and Individual Research Problems in Music Education.** (See first term) (Ar.; ar.) Winslow
- Mu.Ed.225E.‡ Advanced Applied Music.** (See first term) Ar.

PHYSICAL EDUCATION FOR MEN‡

First Term

- Phys.Ed.1A.‡ Sports Education.** (1 cred.; no prereq.) Piper and staff
 Sec. 1, Beginning Swimming, VI MTWThF Sec. 3, Beginning Tennis, IV MTWThF
 2, Beginning Golf, V-VI MWF
- Phys.Ed.2A.‡ Sports Education.** (1 cred.; all) Piper and staff
 Sec. 1, Intermediate Swimming (prereq. ability to swim 25 yards) VIII MTWThF
 2, Intermediate Golf, V-VI TTh and 2 hrs. ar.
 3, Advanced Swimming (prereq. ability to swim 100 yards) VII MTWThF
- Phys.Ed.4A,B,C.‡ Fundamentals of Football, Basketball, Track.** (1 cred. each; no prereq.; 7:30-9:00 a.m. MTWThF) Roning, Cowles, Kelly
- Phys.Ed.5A.‡ Touch Football, Six-Man Football, Conditioning.** (1 cred.; no prereq.; IV MTWThF) Roning
- Phys.Ed.5B.‡ Gymnastics.** (1 cred.; no prereq.; V MTWThF) Shawbold
- Phys.Ed.6A.‡ Soccer, Speedball, Volleyball.** (1 cred.; no prereq.; II MTWThF) Roning
- Phys.Ed.6C.‡ Aquatics.** (1 cred.; prereq. ability to swim 100 yards; VII MTWThF) Shawbold
- Phys.Ed.7A.‡ Active and Social Games.** (1 cred.; no prereq.; VI MTWThF) Shawbold
- Phys.Ed.9A.‡ Folk Dancing.** (1 cred.; no prereq.; VII MTW and 2 hrs. ar.) Piper
- Phys.Ed.9B.‡ American Country and Ballroom Dancing.** (1 cred.; no prereq.; VIII MTWTh, IX Th) Piper
- Phys.Ed.32. Introduction to Physical Education.** An orientation course for prospective teachers. History, vocational significance, and fundamental principles of physical education. (3 cred.; no prereq.; II MTWThF; 205CH) Terry
- Phys.Ed.50. Human Anatomy.** A study of the structure of the human body with emphasis upon the bones, nerves, and muscles and their significance in physical education. (3 cred.; no prereq.; III MTWThF; 205CH) Osell
- Phys.Ed.51. Mechanics of Movement.** A discussion of the principles and mechanics of body movements; the effect of various exercises upon the tissues and organs of the body. (3 cred.; prereq. anat.; IV MTWThF; 205CH) Osell
- Phys.Ed.55.‡ Methods in Physical Education.** Application of the principles of methodology to physical education, analysis and study of the techniques of measurement devices for grading and classifying pupils. Technique of lesson planning. (4 cred.; jr.; prereq. 6 cred. in activity courses or equiv.; I MTWThF and 6 hrs. ar.) Terry
- Phys.Ed.60A.‡ Prevention and Care of Injuries.** Policies for conditioning of athletes in interscholastic and intercollegiate sports, safety controls, care and prevention of injuries in physical education. (3 cred. prereq. 50, 51; V MTWThF; 215CH) Stein
- Phys.Ed.63. Organization and Administration of Physical Education.** Problems of organization, administration, and supervision in required and elective courses, intramural and interschool athletics. (3 cred.; prereq. 32 or 101, 55; VI MTWThF) Piper

- Phys.Ed.66. Officiating of Football and Basketball.** A study of the high school rules, college rules, and techniques of officiating. (3 cred.; no prereq.; III MTWThF; ar.) Roning
- Phys.Ed.67-68-69. Coaching of Football, Basketball, Track.** (2 weeks each) Study of the theory, strategy, and generalship. Styles of offense and defense, methods of organizing practice periods, training of squads, etc. (1 cred. each; jr., sr.; prereq. 4A-B-C; II MTWThF; 215CH) Bierman, Cowles, Kelly
- Phys.Ed.73-74-75.† Directed Teaching.** Actual practice in teaching physical education activities. (2 cred. each; prereq. 55, Ed. 55A-B, junior comprehensive tests, C plus av. in major courses, and cons. of director of student teaching in the College of Education; 10 to 12 hours a week ar.) Piper
- Phys.Ed.101. Principles of Physical Education.** A study of the aims, scope, and biological aspects of physical education with special consideration of the place of physical activity in education. (3 cred.; jr., sr., grad.; prereq. 32, 55, and 9 cred. of activity courses; I MTWThF; 215CH) Keller
- Phys.Ed.135. Tests and Measurements in Physical Education.** Critical analysis of existing testing methods in physical education. Study of current tests from both practical and theoretical standpoints. Use of tests in the administration of physical activity programs. Application of the principles of test construction to specific problems in physical education. (3 cred.; sr., grad.; prereq. 10 hrs. in phys.ed. and Ed.Psy. 60 or equiv.; II MTWThF) Keller
- Phys.Ed.233. Special Administrative Problems in Physical Education in Secondary Schools.** Survey of staff organizations in typical situations such as small towns, cities, states, and schools; construction, maintenance, and policies for use of facilities; purchase, care, and use of equipment; legal aspects of physical education and athletic activities. (3 cred.; grad.; IV MTWThF; 214CH) Nordly
- Phys.Ed.241. The Administration and Supervision of Public Recreation.** The organization for recreation; policies and procedures relating to finance, program, facilities, office management, legislation, and public relations. (3 cred.; grad.; III MTWThF; 214CH) Fitzgerald
- Phys.Ed.247.* Problems in Health Education, Physical Education, and Recreation.** Individual projects and conferences related thereto. (Cred. and hrs. ar.; grad.) Nordly
- Phys.Ed.261. Seminar in Contemporary Problems in Recreation and Physical Education.** Presentation of problems by class members; readings, discussions, problems selected for individual study. (Cred. ar.; grad.; V MTWThF; 205CH) Nordly

Second Term

- Phys.Ed.1B.‡ Sports Education.** (1 cred.; no prereq.) Piper and staff
 Sec. 1, Handball and Squash, VII MTWThF
 2, Beginning Swimming, VII MTWThF
- Phys.Ed.2B.‡ Sports Education.** (1 cred.; all) Piper and staff
 Sec. 1, Intermediate Tennis, IV MTWThF
 2, Intermediate Swimming (prereq. ability to swim 25 yards) VI MTWThF
- Phys.Ed.5C.‡ Softball and Stunts.** (1 cred.; Phys.Ed. majors; V MTWThF)
 Ostrander
- Phys.Ed.6B.‡ Handball and Squash.** (1 cred.; Phys.Ed. majors; VII MTWThF) Piper
- Phys.Ed.7B.‡ Boxing and Wrestling.** (1 cred.; no prereq.; III MTWThF)
 Bartelma
- Phys.Ed.7C.‡ Individual and Dual Sports.** (1 cred.; Phys.Ed. majors; VI MTWThF) Ostrander
- Phys.Ed.8.‡ Tennis and Golf.** (1 cred.; Phys.Ed. majors; VIII MTWThF)
 Piper, Bolstad

- Phys.Ed.9A.‡ Folk Dancing.** (1 cred.; no prereq.; VIII MTWThF) Piper
- Phys.Ed.52. Leadership of Social Activities.** Methods of planning, organization, and leadership of social games, parties, social and folk dances, picnics and outings. (3 cred.; no prereq.; all; V MTWThF; 214CH) Ostrander
- Phys.Ed.65. The Adapted Physical Education Program.** Corrective reconditioning, and rehabilitation activities and special emphasis on the adaptation of activities for the handicapped in school programs of physical education. (3 cred.; jr., sr.; prereq. 50, 51; II MTWThF; 205CH) Osell
- Phys.Ed.73-74-75.‡ Directed Teaching.** (See first term) Piper
- Phys.Ed.121. Principles of Recreation Methods.** This course studies recreation technique and methods as applied to the individual leader, the group, the community, and to all the areas in community recreation—the arts and crafts, music, drama, nature, social activities, and games and sports. (3 cred.; prereq. Ed.T. 84A-B-C, Ed.T. 85A-B-C; II MTWThF) Fitzgerald
- Phys.Ed.155. Instructional Aids in Health, Physical Education and Recreation.** A survey and evaluation of instructional materials in these fields with emphasis on audio-visual aids. (3 cred.; sr., grad.; lect. and lab. IV-V MTWTh; 214CH) Bartelma
- Phys.Ed.234. The Secondary School and College Curriculum in Physical Education.** Theory and principles of program construction applied to physical education. Critical analysis of existing programs and evaluation of activities in the light of modern trends. Practical application of principles in the construction of a program for a specific situation. (3 cred.; grad.; VI MTWThF) Piper
- Phys.Ed.236. Recent Literature and Research in Physical Education and Recreation.** Directed readings and class discussions of recent literature; critical analysis of research in physical education and recreation; selection and presentation of an outline for the solution of a problem. (3 cred.; grad.; III MTWThF; 214CH) Nordly
- Phys.Ed.247.* Problems in Health Education, Physical Education, and Recreation.** (See first term) Nordly

PHYSICAL EDUCATION FOR WOMEN

Physical Examination

It is recommended that every woman student avail herself of the opportunity offered by the Students' Health Service for a physical examination. Everyone, but especially a teacher, should know her health status. The Department of Physical Education for Women strongly urges every person who is taking one or more activity courses to make an appointment at once for a physical examination at the Health Service. Health Service approval must be secured for participation in swimming classes, recreational swimming, team sports, and modern dance.

Fees

The rental fee for suits and towels for swimming is 10 cents apiece. There will be a nominal fee charged for the use of the tennis courts and the golf course. Towels for shower baths may be procured from the matron for 5 cents apiece.

Facilities for Recreation

The swimming pool is open for recreational use from 2:45 to 4:30 p.m. Monday through Friday during both the first and second terms.

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

Teaching Qualifications

Those interested in teaching physical education in the state of Minnesota must qualify in one of the following professional programs:

1. Courses applying to the nine-credit endorsement for teaching in the state of Minnesota are: Phys.Ed. 4, 5, 12, 13, 18, 37, 84 (82 and 95 by correspondence).
2. Courses applying to the state minor in physical education are: Phys.Ed. 4, 5, 11, 12, 13, 18, 25, 37, 83, 84, 90.
3. Courses applying to the undergraduate major in physical education are: Phys.Ed. 4, 5, 11, 12, 13, 18, 25, 37, 83, 84, 114.
4. Courses applying to the Master's degree with a major in physical education are: Phys.Ed. 112, 114E or Ed.C.I. 114, 115, 118E, 224; also certain courses in Physical Education for Men.

Student Teaching

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

First Term

- Phys.Ed.4.‡¶ Fundamentals of All Rhythmic Work and Methods.** The fundamental elements of rhythm are applied to all types of rhythmic activity usable in the grade and junior high school; special applications are made to rhythms for little children, folk and tap dancing, and ballroom dancing. Not a skills course primarily. Methods appropriate to fundamentals of rhythm and to age level will be studied and experienced. (2 cred.; no prereq.; practical work, VII MWF, lect., VII TTh; 151NGW) Hussey, Bell
- Phys.Ed.5.‡‡ Methods of Coaching and Conducting Organized Games for Junior and Senior High Schools.** Special techniques for team games such as field ball, speed ball, soccer, volleyball, basketball, and softball. Organization of extracurricular activities, e.g., athletic associations, after-school programs, tournaments suited to various games, play days, methods of teaching. (2 cred.; practical work, II MWF, lect., II TTh; 151NGW) Ar.
- Phys.Ed.7.‡ Tennis for Beginners.** Open to those with little or no experience in tennis. Instruction will include the service, forehand drive, backhand drive, rules and etiquette of the game. Individual coaching will be stressed. Students are required to furnish own rackets and balls. (1 cred.; no prereq.; V MTWTh; 151NGW) Ar.
- Phys.Ed.8.‡ Golf for Beginners.** This course is open to those with little or no experience in golf. The fundamental strokes and individual analysis of the player's game are stressed along with the rules and etiquette of the game. (Limited to 20) (1 cred.; no prereq.; 7:30 a.m. MTWTh; 60NGW) Ar.
- Phys.Ed.11.‡‡ Modern Dance and Methods.** Elementary modern dance skills usable in an average high school. Simple adaptations of modern principles of composition. Methods appropriate to the teaching of modern dance at the secondary level will be studied and experienced. (2 cred.; no prereq.; practical work IV MWF, lect., IV TTh; 151NGW) Bell
- Phys.Ed.12.‡ Social Recreation—Ballroom and American Country Dance.** Ballroom dance skills and country dances selected for use in high school teaching. Simple mixers for social groups will be included. (1 cred.; no prereq.; VIII MTWTh; 151NGW) Ar.

‡ Health Service approval must be secured for participation in this course.

¶ Delia Hussey, of Detroit, Michigan Public Schools, will teach the course June 26 to 30.

- Phys.Ed.13.‡ Tumbling, Stunts, Pyramids, and Methods.** 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. Teaching methods appropriate to this activity area will be discussed and experienced. (2 cred.; no prereq.; practical work, III MWF, lect., III TTh; 153NGW) Wilson
- Phys.Ed.18.‡ Elementary Folk Dancing, Games, and Methods.** Graded folk dances and games usable at the elementary and secondary levels; teaching methods suited to the different age levels and the content will be discussed and experienced. (2 cred.; no prereq.; practical work VI MWF, lect. VI TTh, 151NGW) Bell
- Phys.Ed.25. First Aid.** Lectures, demonstrations, and practice in emergencies and first aid treatment. Special emphasis on care of injuries in physical education. An American Red Cross Standard Certificate in First Aid is received upon successful completion of this course. (1 cred.; no prereq.; VI MTWTh; 201NGW) Wilson
- Phys.Ed.32.‡‡ Elementary Swimming.** For those who are unable to swim in deep water. Instruction includes: orientation activities, water safety skills, crawl, side stroke, backstroke, and diving. (1 cred.; no prereq.; VI MTWTh; 58NGW) Eibner
- Phys.Ed.33.‡‡ Intermediate and Advanced Swimming.** For those who can swim in deep water. Instruction includes: the crawl, side stroke, back crawl, personal water safety skills, diving. The class will be divided into groups according to ability, interests, and experience of the swimmers. (1 cred.; prereq. cons. of instr.; VII MTWTh; 58NGW) Eibner
- Phys.Ed.37.‡ Individual and Dual Games and Methods.** Deals with the various methods and techniques suitable for the teaching of the following sports: table tennis, archery, badminton, bowling, deck tennis, tether ball, shuffleboard. Consideration of group methods adaptable to the organization and teaching of these activities on the junior and senior high school levels. (2 cred.; no prereq.; practical work V MWF, lect. V TTh; 153NGW) Birmingham
- Phys.Ed.90.‡ Student Teaching.** An opportunity of teaching elementary school children and assisting in college classes will be provided for those who must meet a student teaching requirement in the summer. (1 cred.; prereq. cons. of instr.; hrs. ar.) Ar.
- Phys.Ed.112. Supervision of Physical Education.** Presents a consideration of the function, organization, and administration of supervision in physical education; adaptations of accepted procedures for observation, guidance, and training of teachers in the field; standards for qualifications of supervisors; problems peculiar to supervision of physical education. (3 cred.; III MTWThF; 201NGW) Baker
- Phys.Ed.115. Recent Literature and Research in Mechanics of Movement.** An analysis of techniques of mechanics and kinesiology of movement; consideration of a variety of skills as well as those of particular interest to the class; an evaluation of pertinent methods and devices used in current research; an application of analyses and evaluations to an individual project. (3 cred.; prereq. undergraduate course in kinesiology or cons. of instr.; IV MTWThF; 201NGW) Wilson
- Phys.Ed.118E.§ Problems in Teacher Education in Health, Physical Education, and Recreation.** For M.Ed. students who are interested and participating in the conduct and development of professional teacher education programs in the fields of school health education, physical education, and the recreational function of physical education. Individual projects and conferences. (3 cred.; prereq. cons. of departmental graduate advisers) Ar.

‡ Health Service approval must be secured for participation in this course.

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

Phys.Ed.224.* Research Problems in School Health Education and Physical Education for Women. Individual problems and conferences. (Cred. ar.; cons. of departmental graduate advisers)

Second Term

Phys.Ed.5.†‡ Methods of Coaching and Conducting Organized Games for Junior and Senior High Schools. (See first term) (Practical work, I MWF, lect. I TTh; 151NGW) Ar.

Phys.Ed.7.‡ Tennis for Beginners. (See first term) (V MTWTh; 151NGW) Ar.

Phys.Ed.13.‡ Tumbling, Stunts, Pyramids, and Methods. (See first term) (Practical work II MWF, lect. II TTh; 153NGW) Ar.

Phys.Ed.18.‡ Elementary Folk Dancing, Games, and Methods. (See first term) (Practical work V MWF, lect. V TTh; 151NGW) Ar.

Phys.Ed.32.†‡ Elementary Swimming. (See first term) Class instruction given. (VI MTWTh; 58NGW) Ar.

Phys.Ed.33.†‡ Intermediate and Advanced Swimming. (See first term) (VII MTWTh; 58NGW) Ar.

Phys.Ed.37.‡ Individual and Dual Games and Methods. (See first term) (Practical work IV MWF, lect. IV TTh; 153NGW) Ar.

Phys.Ed.83. Methods and Materials of School Health Education. For persons interested in school health education in elementary and secondary schools. Consideration is given to methods, materials, principles, and evaluation in school health education programs. Opportunity is given for the study of individual problems. (3 cred.; prereq. cons. of instr.; VI MTWThF; 201NGW) Ericson

Phys.Ed.84. The Physical Education Program for the Elementary and Secondary Schools. A study of current curricular problems in the field of physical education with emphasis on both elementary and secondary levels. Individuals will be given the opportunity of working on special program problems of concern to them. (3 cred.; prereq. experience on elementary or secondary levels or cons. of instr.; III MTWThF; 3NGW) Jaeger

Phys.Ed.114. School Health Education Program. A study of the program of health education in public elementary and secondary schools with special reference to curriculum construction, health supervision and guidance, relationships between the public schools and governmental health organizations and agencies, and evaluation of the school health program. Students are given guidance in the solution of individual professional problems. (3 cred.; sr., grad.; prereq. 83, P.H.50 or equiv. or cons. of instr.; IV MTWThF; 201NGW) Ericson

Phys.Ed.118E.§ Problems in Teacher Education in Health, Physical Education, and Recreation. (See first term) Ar.

Phys.Ed.224.* Research Problems in School Health Education and Physical Education for Women. (See first term)

† Health Service approval must be secured for participation in 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, Home Economics, and Veterinary Medicine, 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.

Courses fulfilling the requirement of independent work and the preparation of written reports for the Master's degree, Plan B, shall be of graduate level and shall be made part of an approved program only upon recommendation of the candidate's adviser and the instructor for the course.

A double dagger (‡) indicates courses for which course fees are charged. See Course Fees, pages 14-17.

First Term

Econ.3 Elements of Money and Banking. The basic principles of money and a description of the various types of financial institutions, their functions and relation to the whole economic organization. (3 cred.; 2nd and 3rd qtr. fr., soph., jr., sr.; no prereq.) Ar.

Sec. 1, IV MTWThF, 205VH

Sec. 2, VII MTWThF, 221VH

Econ.5.‡ Elements of Statistics. Elementary concepts in statistical methods; averages, ratios, errors, sampling, index numbers, graphic representation, collection of material. (3 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq.) Ar.

Sec. 1, I MTWThF, 205VH

Sec. 2, VI MTWThF, 221VH

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

Sec. 1, I MTWThF, 307VH

Sec. 3, IV MTWThF, 115VH

2, III MTWThF, 221VH

4, VII MTWThF, 6VH

‡ Not open to students who have received credit in Soc. 45 or B.A. 70.

Econ.22. Principles of Accounting. The balance sheet, profit and loss statement, the recording process, special journals and ledgers, adjustments, work sheets, closing, and the voucher system. (4 cred.; soph., jr., sr.; no prereq.) Lund and staff

Sec. 1, I MTWThF, VI-VII M, 306VH Sec. 3, III MTWThF, VI-VII T, 306VH
2, II MTWThF, VIII-IX M, 306VH 4, IV MTWThF, VIII-IX T, 306VH

Econ.32.‡ Beginning Typewriting. Personal use factors; keyboard technique for touch typing; letter arrangement; speed development. (1 cred.; fr., soph., jr., sr.; no prereq.; IV MTWThF, VII MWF; 209VH) Austin

Econ.37A.‡ Thomas Natural Shorthand. Presentation of principles of the system; development of a basic vocabulary using Thomas outlines; experience in dictation and transcription situations. (3 cred.; soph., jr., sr.; prereq. 32 or equiv.; II MTWThF, VI MWF; 211VH) Ar.

Econ.39.†† Intermediate Shorthand. Refresher course; review of 5,000 most-used Gregg shorthand forms; mailable letters transcribed from dictation. (3 cred.; soph., jr., sr.; prereq. 38, one year of high school shorthand, 60 words per minute on Gregg five-minute test material, or cons. of instr.; III MTWThF, VI MWF; 209VH) Austin

Econ.50. Insurance Principles. An introductory course dealing with the nature and measurement of risk and the development and uses of personal, property, and liability insurance. Forms of protection; policy contracts; social insurance and government regulation. (3 cred.; jr., sr.; prereq. 6-7 or equiv.) Graves

Sec. 1, IV MTWThF, 1VH Sec. 2, VII MTWThF, 1VH

B.A.51.§ Business Law: Contracts. A discussion of the law of contracts. (3 cred.; jr., sr.; prereq. Econ. 6-7) Ar.

Sec. 1, I MTWThF, 113VH Sec. 3, II MTWThF, 113VH
2, I MTWThF, 115VH 4, II MTWThF, 115VH

B.A.53.§ Business Law: Sales and Negotiable Instruments. A discussion of the law of sales and of negotiable instruments. The case method is used in 51, 52, and 53. (3 cred.; jr., sr.; prereq. 51) Ar.

Sec. 1, I MTWThF, 221VH Sec. 2, II MTWThF, 221VH

B.A.58.¶ Elements of Public Finance. Public expenditures, revenues, debts, fiscal policy, and financial administration. Special attention is given to tax principles, practices, burdens, and coordination of national, state, and local finance. This is a condensed course given especially for School of Business Administration students. (3 cred.; jr., sr.; prereq. Econ. 6-7 or equiv.; VI MTWThF; 207VH) Marcoux

B.A.68. Sales Management. Organization and direction of sales methods and men from the sales manager's point of view; determination of selling policy; product and market research; sales planning and research; selection of distribution methods; sales campaigns and quotas; incentives and compensation for salesmen; training in salesmanship; supervision and control. Case studies and discussions. (3 cred.; jr., sr.; prereq. 77; II MTWThF; 2VH) Lewis

B.A.71†† Transportation: Services and Charges I. Survey and economic aspects of national transportation policy, rail, highway, air, and water transportation facilities, services, rates, regulation, and current transportation problems. (3 cred.; jr., sr.; prereq. Econ. 6-7 or equiv.; VII MTWThF; 2VH) Michalson

B.A.72. Transportation: Services and Charges II. Analysis of the principles relating to construction, interpretation, and application of rail, water, express, and air freight classifications and tariffs. Analysis of railway freight struc-

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

§ To receive credit a student must complete 51 and either 52 or 53.

¶ Credit may not be received for both B.A. 58 and either Econ. 189 or 191-192.

†† Credit may not be received for both B.A. 71 and Econ. 172.

tures. Problems relating to the determination of charges on typical movements within and between major railway freight-rate territories. (3 cred.; jr., sr.; prereq. 71 or Econ. 172; IV MTWThF; 2VH) Nightingale

B.A.76. Credits and Collections. Study of the nature and types of credit and of credit instruments and agencies; qualifications and work of the credit manager; valuation and use of financial statements and credit reports; collection methods and correspondence; bankruptcy and adjustments; credit limits and control. (3 cred.; jr., sr.; prereq. 77; IV MTWThF; 221VH) Nielsen

B.A.77.† Survey in Marketing. Survey course including descriptive analysis of (1) marketing institutions and their control; (2) market areas; (3) marketing costs; (4) the operation of supply and demand in marketing. (3 cred.; jr., sr.; prereq. Econ. 6-7 or equiv.) Ar.

Sec. 1, III MTWThF, 115VH

Sec. 2, V MTWThF, 207VH

Econ.80.§ Intermediate Economic Analysis. The development and the application of methods of economic analysis to problems of price and production under conditions of competition, monopoly, and monopolistic or imperfect competition. (3 cred.; jr., sr.; prereq. 20 cred. in soc. sci. including 6-7 or equiv.) Smith and others

Sec. 1, I MTWThF, 6VH
2, II MTWThF, 4VH

Sec. 3, III MTWThF, 113VH
4, V MTWThF, 1VH

B.A.88. Advertising. The course covers two important phases of advertising: (1) the place of advertising in business, (2) advertising procedure. Attention is given to planning an advertising campaign; including market research, appropriation, choice of media, scheduling, preparation of copy, and layout. (3 cred.; jr., sr.; prereq. 77 and Psy. 56; IV MTWThF; 4VH) Lewis

B.A.89. Production Management. Location and layout of industrial plants; types of operating organization; shop personnel; standards of operation; purchasing and inventory control; routing, scheduling, and dispatching of product; scientific management; practical problems in production control. (3 cred.; jr., sr.; prereq. Econ. 6-7 or equiv.) Filipetti and others

Sec. 1, III MTWThF, 207VH

Sec. 2, IV MTWThF, 6VH

B.A.93. Accounting Laboratory. A long practice problem will be worked under supervision. Required of majors in accounting and in business education. (1 cred.; jr., sr.; prereq. Econ. 23 or equiv.; VI-VII TTh; 307VH) Nielsen

Econ.103.§¶ Advanced Economic Theory. An advanced course in general economic theory with special emphasis on the systematic development of the tools of modern economic analysis, and the application of analytical methods to problems of price and production under conditions of competition, monopoly, and monopolistic or imperfect competition. (3 cred.; jr., sr. by cons. of instr., grad.; prereq. 20 cred. in soc. sci. including 6-7 or equiv.; IV MTWThF; 113VH) Boddy

B.A.112.‡ Business Statistics. Explanation and criticism of statistical techniques for dealing with time series; measurements of trend, seasonals, cycles; business index numbers. Statistical control of quality in manufacturing operations. (3 cred.; jr., sr., grad.; prereq. Econ. 5 or equiv.) Mudgett

Sec. 1, II MTWThF, 205VH

Sec. 2, III MTWThF, 205VH

B.A.118. Auditing Procedure. A laboratory course in auditing procedure. Class instruction in auditing technique and the preparation of a complete set of working papers and an audit report. (3 cred.; jr., sr., grad.; prereq. 150; III TTh, VI-VII MWF; 307VH) Lund

† Credit may not be received for both B.A. 77 and Econ. 185.

§ Credit may not be received for both Econ. 80-81 and Econ. 103-104.

¶ Credit may not be received for Econ. 103 until Econ. 104 has been completed.

- B.A.130.‡¶ Cost Accounting Survey.** A general survey of cost accounting from the point of view of the executive who must use cost information in the conduct of his business. (3 cred.; jr., sr., grad.; prereq. Econ. 23 or equiv.; II MTWThF; 301VH) Wheeler
- B.A.136. Internal Auditing and Accounting Control.** Accounting systems and methods as related to internal check and audit control of routine transactions and the establishment of administrative and budgetary control. (3 cred.; jr., sr., grad.; prereq. 150; V MTWThF; 113VH) Wheeler
- B.A.139.‡ Analysis of Financial Statements.** Interpretation and analysis of financial statements, credit, investment, and managerial analysis of financial statements. Final analysis and consolidated statements. Industrial, public utility, railroad statements. (3 cred.; jr., sr., grad.; prereq. Econ. 23 or equiv.; I MTWThF; 207VH) Heilman
- Econ.142. Monetary and Banking Policy.** An advanced course in money and banking policy viewed from the social standpoint with primary reference to the problems of the Federal Reserve System. Selected problems in monetary policy, monetary reconstruction, and monetary reform. (3 cred.; jr., sr., grad.; prereq. 3 and 6-7 or equiv.; II MTWThF; 1VH) Uppgren
- B.A.146. Investments.** A general or "cross-cut" survey of the external and internal factors influencing the prices of securities, and of the principles of an investment policy for the individual investor. Emphasis is placed upon objective analysis from source materials of factors explaining price differentiation. (3 cred.; jr., sr., grad.; prereq. Econ. 155; II MTWThF; 207VH) Stehman
- Econ.149. Business Cycles.** Analysis of factors involved in business fluctuations. Comparison of theories of their causes. Examination of proposals for the stabilization of employment, production and capital formation. Introduction to the statistical data and methods of business forecasting. (3 cred.; sr., grad.; prereq. 142 or cons. of instr.; III MTWThF; 1VH) Uppgren
- B.A.150.‡ Intermediate Accounting I.** Principles involved in valuation of assets, liabilities and stockholders' interest; determination of periodic income. (3 cred.; jr., sr., grad.; prereq. 139 and Math. 20; II MTWThF; 307VH) Heilman
- B.A.152.¶ Cost Accounting.** The basic principles of cost accounting with special reference to the job order cost system. (3 cred.; jr., sr., grad.; prereq. Econ. 23 or equiv.; I MTWThF; 301VH) Reighard
- Econ.155. Corporation Finance.** Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporations. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations. (3 cred.; jr., sr., grad.; prereq. 6-7 or equiv.) Ar.
 Sec. 1, I MTWThF, 1VH Sec. 2, VI MTWThF, 2VH
- B.A.156. Finance Management.** The duties of the financial manager of a modern business. The various sources from which capital may be secured, the best use of a company's funds, and special financial problems which arise in the typical business. (3 cred.; jr., sr., grad.; prereq. Econ. 155; IV MTWThF; 207VH) Stehman
- Econ.161. Labor Problems and Trade Unionism.** An introduction to social and economic problems involved in the allocation, utilization, and conservation of human resources in the present-day economy of the United States. Consideration is given to problems arising from the failure to achieve social goals with respect to stabilizing employment, hours of work, wages, and other working conditions. Special attention is directed to the role of labor organizations and of governmental intervention in labor market processes. (3 cred.; jr., sr., grad.; prereq. 6-7 or equiv.) Ar.
 Sec. 1, I MTWThF, 4VH Sec. 2, VII MTWThF, 113VH

¶ Credit may not be received for both B.A. 130 and B.A. 152.

- Econ.162. Labor and Socialist Movements.** Analysis of structure and operation of American labor unions. An interpretation of leading labor movements in Europe and the United States during the last century. (3 cred.; jr., sr., grad.; prereq. 161; I MTWThF; 2VH) Ar.
- B.A.167. Introduction to Industrial Relations.** An elementary survey of policy and practice in the management of manpower. The course seeks to provide a professional point of view toward, and an introduction to, the major functions of manpower management, including the formulation of policy, determination of labor needs, job analysis and classification, methods of recruiting employees, selective devices, training and safety programs, service rating, employment stabilization, collective bargaining, and wage and salary administration. (3 cred.; jr., sr., grad.; prereq. Econ. 161; III MTWThF; 4VH) Ar.
- Econ.172.¶ Economics of Transportation.** (For the Summer Session this course is the equiv. of B.A. 71) An analysis of the economics of the agencies of modern transportation, including rail, water, highway, air, and pipe line. Relative advantage of each agency, national transportation policy, regulation, ratemaking, taxation, coordination of services. (3 cred.; jr., sr., grad.; prereq. 6-7 or equiv.; III MTWThF; 6VH) Nightingale
- Econ.175. Government Regulation of Business.** A general course on the economic aspects of legislation affecting the pricing process and the distribution of the national income. Topics studied include economic origins of modern business limitations on free competition; regulation of public utilities, trusts and combinations, and "unfair competitive practices"; positive assistance to industrial groups. (3 cred.; jr., sr., grad.; prereq. 20 cred. in soc. sci. including 6-7 or equiv.) Boddy and others
- Sec. 1, III MTWThF, 2VH Sec. 2, VI MTWThF, 113VH
- B.A.181A. Senior Topics: Accounting.** Readings in accounting literature with particular emphasis on accounting theory and recent periodical and bulletin materials. (3 cred.; sr., grad.; prereq. 150; III MTWThF; 301VH) Reighard
- B.A.184.§ Scientific Management in Industry.** A study of the origin and development of the movement to apply the methods of science to the management of industrial enterprises; the effects upon individual plant management and the influence upon "rationalization" in industrial society. (3 cred.; sr., grad.; prereq. Econ. 6-7; II MTWThF; 6VH) Filipetti
- Econ.251. Seminar in Industrial Relations.** (3 cred.; grad.; hrs. ar.) Yoder

Second Term

- Econ.3. Elements of Money and Banking.** (See first term) (III MTWThF; 115VH) Ar.
- Econ.5.† Elements of Statistics.** (See first term) (II MTWThF; 115VH) Ar.
- Econ.7. Principles of Economics.** (Continuation of 6) (3 cred.; soph., jr., sr.; prereq. Econ. 6) Ar.
- Sec. 1, II MTWThF, 221VH Sec. 3, IV MTWThF, 221VH
2, III MTWThF, 221VH 4, VII MTWThF, 113VH
- Econ.23. Principles of Accounting.** Partnership, profit-sharing, dissolution; corporation accounting—capital stock, surplus, dividends, reserves, funds, bonds, departmental accounting, branch accounting, manufacturing statement analysis, and interpretation. (4 cred.; soph., jr., sr.; prereq. 22) Ar.
- Sec. 1, I MTWThF, VI-VII M, 306VH Sec. 3, III MTWThF, VI-VII T, 306VH
2, II MTWThF, VIII-IX M, 306VH 4, IV MTWThF, VIII-IX T, 306VH

† Not open to students who have received credit in Soc. 45 or B.A. 70.

§ Credit may not be received for both B.A. 184 and B.A. 180G.

¶ Credit may not be received for both B.A. 71 and Econ. 172.

B.A.52. Business Law: Agency, Partnership, and Corporations. The law of agency and a consideration of problems of partnerships and corporations. (3 cred.; jr., sr.; prereq. 51) Ar.

Sec. 1, I MTWThF, 6VH

Sec. 3, II MTWThF, 6VH

2, I MTWThF, 2VH

B.A.56. Business Law: Property Rights and Obligations. Legal principles governing the transfer of title to, control of, and mortgaging of property, real and personal, including abstract examination; also related principles of trusts and liquidation. Some time will be reserved for current statutory developments. Case method and special readings. (3 cred.; jr., sr.; prereq. 52 or 53; II MTWThF; 2VH) Ar.

B.A.58. (See Econ. 189)

B.A.69. Retail Store Management. Organization; location, layout, and equipment; buying and sales budgets and sales planning; sales promotion; interior and window display; stock and expense control; finance and general policy; credits and collections; personnel; store operation and services. Case studies, problems, and discussions. (3 cred.; jr., sr.; prereq. 77; I MTWThF; 221VH) Canoyer

B.A.71.† Transportation: Services and Charges I. (See first term) (VI MTWThF; 113VH) Michalson

Econ.81.‡ Intermediate Economic Analysis. The development and the application of methods of economic analysis to problems of income distribution and employment of resources. (3 cred.; jr., sr.; prereq. 80) Ar.

Sec. 1, I MTWThF, 1VH

Sec. 3, III MTWThF, 1VH

2, II MTWThF, 1VH

4, V MTWThF, 1VH

B.A.89. Production Management. (See first term) (III MTWThF; 2VH) Mitton

B.A.94. Cost Accounting Laboratory. The design and operation of a special order, and a multiple process cost accounting system. (1 cred.; jr., sr.; prereq. 152 or concurrent; VI-VII MW; 307VH) Johnson

Econ.104.‡ Advanced Economic Theory. Advanced course in general economic theory with special emphasis on the systematic development of the tools of modern economic analysis, and the application of analytical methods to problems of income and employment determination. (3 cred.; jr., sr. by cons. of instr., grad.; prereq. 103; IV MTWThF; 113VH) Papandreou

Econ.106. History of Economic Ideas: The Critics of the Classical Economists. The contribution of the German Romantic and French Socialist schools is examined briefly and is followed by an extensive consideration of Marxian criticism and analysis. The Neoclassical synthesis and methodology is contrasted to classical economics on the one hand, and the Keynesian system on the other. Finally, detailed and systematic presentation of the Keynesian system and an appraisal of its contribution to economic thought is undertaken. (3 cred.; jr., sr., grad.; prereq. 80-81 or 103-104 or cons. of instr.; III MTWThF; 113VH) Papandreou

B.A.112.‡ Business Statistics. (See first term) (I MTWThF; 205VH) Ar.

B.A.130.‡§ Cost Accounting Survey. (See first term) (IV MTWThF; 6VH) Ar.

B.A.133. Standard Costs. The methods of standard costs. The meaning of standards. The setting of standards for materials, labor, and overhead. The analysis of and accounting for variations. The development and application of standards to distribution as well as to production activities. (3 cred.; jr., sr., grad.; prereq. 130 or 153; I MTWThF; 113VH) Ostlund

† Credit may not be received for both B.A. 71 and Econ. 172.

§ Credit may not be received for both B.A. 130 and B.A. 152.

‡ Credit may not be received for both Econ. 80-81 and Econ. 103-104.

- B.A.134. Income Tax Accounting.** The principles involved in determining taxable net income and the computation of federal and state income taxes for corporations, individuals, and trusts. (3 cred.; jr., sr., grad.; prereq. 150; IV MTWThF; 2VH) Nelson
- Econ.142. Monetary and Banking Policy.** (See first term) (VI MTWThF; 207VH) Stovel
- B.A.150.‡ Intermediate Accounting I.** (See first term) (III MTWThF; 205VH) Nelson
- B.A.153. Cost Accounting.** Process costs, joint and by-product costs, estimated costs, standard costs, budgets, cost control. (3 cred.; jr., sr., grad.; prereq. 152; II MTWThF; 205VH) Ostlund
- Econ.155. Corporation Finance.** (See first term) (II MTWThF; 207VH) Borak
- Econ.161. Labor Problems and Trade Unionism.** (See first term) (IV MTWThF; 1VH) Ar.
- Econ.164. Labor Legislation and Social Insurance.** A course dealing with the economic aspects of labor legislation, including minimum wage laws; hours legislation; factory acts; accident, health, old age, and unemployment compensation; mothers' pensions. (3 cred.; jr., sr., grad.; prereq. 161; II MTWThF; 113VH) Ar.
- B.A.167. Introduction to Industrial Relations.** (See first term) Ar.
 Sec. 1, I MTWThF, 207VH Sec. 2, III MTWThF, 6VH
- Econ.176. International Commercial Policies.** Theory of international commerce; protective tariffs, free trade, reciprocity, subsidies, preferential treatment, the open door, international finance, commercial treaties, foreign politics, and other governmental and organized efforts to affect trade. American problems emphasized. (3 cred.; jr., sr., grad.; prereq. 6-7 or equiv.; IV MTWThF; 207VH) Stovel
- Econ.185.¶ Economics of Marketing.** (For the Summer Session, this course may be substituted for B.A. 77) A course dealing with (1) the role of market distribution in our total economy; (2) the costs of market distribution; (3) regional specialization and market distribution; (4) public, quasi-public, and corporate control of market distribution; (5) the role of the consumer in market distribution. (3 cred.; jr., sr., grad.; prereq. 6-7 or equiv.; III MTWThF; 207VH) Canoyer
- Econ.189.† Principles of Public Finance.** (For the Summer Session, this course is the equiv. of B.A. 58) Public expenditures, revenues, debts, fiscal policy, and financial administration. Special attention is given to tax principles, practices, and burdens. (3 cred.; jr., sr., grad.; prereq. 6-7 or equiv.; V MTWThF; 207VH) Borak

† Credit may not be received for both Econ. 189 and either B.A. 58 or Econ. 191-192.

¶ Credit may not be received for both Econ. 185 and B.A. 77.

INSTITUTE OF CHILD WELFARE

The Institute of Child Welfare was organized for three purposes: research in child development; training future workers with children; and bringing information to parents on the care and training of children. The institute offers graduate and undergraduate courses and conducts a nursery school and kindergarten for demonstration and research purposes.

Nursery School and Kindergarten

The Nursery School and Kindergarten will be in session from 8:00 a.m. to 12:00 noon, beginning June 14 and closing July 21. Applications for the enrolment of children will be received at the office of the institute. The fee will be \$25 for tuition, which includes orange juice and lunch at noon.

Responsibility for transportation to and from schools must be taken by the parents.

An asterisk (*) indicates courses that may be taken by graduate students for independent work under Plan B. (See pages 18-19.)

First Term

40. **Child Training.** The physical and mental development of the child. The training of young children. Observations in the Nursery School, lectures, and reports. (3 cred.; soph., jr., sr.; prereq. Psy. 1-2; IV MTWThF; 202Pt) Cummings
80. **Child Psychology.** A survey of child psychology and its applications. (3 cred.; jr., sr.; prereq. Psy. 1-2; I MTWThF; 8F) Ar.
131. **Personality, Emotional, and Social Development of the Child.** Interpretation of the scientific literature. Lectures, readings, and reports. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.; I MTWThF; 202Pt) Ar.
132. **Later Childhood and Adolescence.** Growth, social adjustment, emotional, mental, and personality development. Leisure-time activities, educational and vocational interests. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.; IV MTWThF; 206F) Brieland
140. **Behavior Problems in Younger Children.** (See social work, page 50.) Nature, origin, and treatment of behavior difficulties in young children. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed.psy., or soc.; III MTWThF; 202Pt) Brieland
150. **Childhood Education.** History and philosophy, organization and administration, methods and materials of early childhood education. (3 cred.; sr., grad.; prereq. 12 cred. in ed.; II MTWThF; 157TSF) Fuller
170. **Parent Education.** History and survey of programs, materials, and methods. Administration and organization. Lectures, discussions, and reports. (3 cred.; sr., grad.; prereq. 15 cred. in psy., ed., home econ., or soc.; II MTWThF; 202Pt) Cummings
- 270.* **Readings and Research in Child Development.** Independent readings and reports in any field such as physical growth, mental development, social behavior, nursery school theory, parent education, etc., which meets the approval of instructor. (Cred. ar.; grad. students only; hrs. ar.) Staff

Courses Ed.T. 77, Directed Teaching in the Nursery School, and Ed.T. 78, Directed Teaching in the Kindergarten, listed under Methods and Directed Teaching, page 112, in the College of Education; Ed.C.I. 130, Problems in Childhood Education; Ed.C.I. 162, Laboratory in Nursery School and Kindergarten Instructional Practices; and Ed.C.I. 163, Plastic Materials, Story Telling and Social Studies for Young Children, listed under Curriculum and Instruction, page 105 in the College of Education, are also offered by the Institute of Child Welfare.

Second Term

- 80. Child Psychology.** (See first term) (II MTWThF; 114F) Ar.
- 130. Motor, Linguistic, and Intellectual Development of the Child.** Interpretation of the scientific literature. Lectures, readings, and reports. (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.; I MTWThF; 202Pt) Roff
- 132. Later Childhood and Adolescence.** (See first term) (III MTWThF; 202Pt) Roff
- 141. Behavior Problems in Older Children.** (See Social Work, page 51) Nature and origin of behavior difficulties in older children, with particular reference to readjustment in adolescence. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed.psy., or soc.; II MTWThF; 202Pt) Blodgett
- 142. Psychology of Atypical Children.** A survey of the scientific literature on children with physical and mental handicaps. Emphasis upon personal, social, and vocational adjustment. (3 cred.; sr., grad.; prereq. 12 cred. in psy., ed.psy., or soc.; IV MTWThF; 202Pt) Blodgett
- 270.* Readings and Research in Child Development.** (See first term) Staff

LIBRARY INSTRUCTION

In the Summer Session the Division of Library Instruction offers a series of integrated eight-week terms which allow a student to complete the full library course in four summers. During these eight weeks, basic courses will be offered for beginners and advanced courses for students who have already partially completed the program.

Note—Course numbering follows that of the revised curriculum; see the *Division of Library Instruction Announcement for the Years 1949-51*.

Fees for the eight-week term include: tuition \$54.50, incidental fee \$9, deposit \$2, total \$65.50; part-time tuition (4 credits or less) \$39, incidental fee \$9, deposit \$2, total \$50.

In order to provide for completion of courses in the proper sequence in subsequent Summer Sessions, students enrolling in the division for the first time who plan to complete a major should register for the following courses:

Lib.Sci.50, 3 credits; Lib.Sci.60, 3 credits; Lib.Sci.62, 2 credits

First Term (8 Weeks)

June 12-August 5

- Lib.Sci.50. **Libraries and Society.** History of libraries; types of libraries, library agencies and services; libraries in the modern world; librarianship as a profession. (3 cred.; no prereq.; III MWF and 1 hr. ar.; 5Lib) Shove
- Lib.Sci.51. **Origins of the Book.** Survey of writing and the materials and methods of writing from earliest times through the spread of printing in the fifteenth century. (2 cred.; no prereq.; III TTh and 1 hr. ar.; 5 Lib) Shove
- Lib.Sci.60. **Sources of Information about Library Materials.** Reviewing media, "best" lists, trade bibliographies, etc. Principles of book selection and order work. (3 cred.; no prereq.; II MWF and 1 hr. ar.; 5Lib) Methven
- Lib.Sci.61. **Library Practice.** Practice under supervision, in Minneapolis and St. Paul libraries. The time and character of the practice will be individually arranged to suit student aptitudes and needs. (3 cred.; prereq. 18 cred. in lib.sci. or satisfactory library experience; ar.) Shove
- Lib.Sci.62. **Reference I.** General reference tools and other sources of information in reference work; theory and practice of reference work. (2 cred.; no prereq.; II TTh and 1 hr. ar.; 5Lib) Ar.
- Lib.Sci.85. **Special Problems.** Individual study on library problems for advanced students in library science. (1-3 cred.; prereq. cons. of director, Division of Library Instruction; ar.) McDiarmid and others
- Lib.Sci.153. **Principles of School Library Organization and Management.** Administration of the school library as a part of the general community educational program. (3-4 cred.; prereq. cons. of instr.; I MWF and 1 hr. ar.; 5Lib) Henne
- Lib.Sci.154. **Principles of Public Library Administration.** The application of theories and principles of administration to the problems of the public library. (3 cred.; prereq. Pol.Sci. 121; III MWF and 1 hr. ar.; 3Lib) Methven
- Lib.Sci.155. **Administrative Problems in the College and University Library.** Educational functions of the college and university library and administrative organization to perform these functions. (3 cred.; prereq. Pol.Sci. 121 or Ed.Ad. 253; I MWF and 1 hr. ar.; 339Lib) Shove
- Lib.Sci.164. **Reference III.** Specialized reference tools; government publications; administration of the reference department; special problems in large libraries. (2 cred.; prereq. 62, 63; I TTh and 1 hr. ar.; 5Lib) Ar.

- Lib.Sci.172. Principles and Problems in Reading Guidance for Adolescents.** The reading interests and needs of the adolescent and guidance in the use of library material for adolescent needs. (3 cred.; prereq. 70; IV MWF and 1 hr. ar.; 5Lib) Henne
- Lib.Sci.173. Principles and Problems in Adult Reading Guidance.** Adult reading interests and factors affecting adult use of library material. (3 cred.; prereq. 70; IV MWF and 1 hr. ar.; 3Lib) Methven
- Lib.Sci.256. Seminar in Library Administration.** (3 cred.; ar.) McDiarmid
- Lib.Sci.271. Seminar in Library Work with Children and Young People.** Individual problems and research in library service to children and young people. (3 cred.; ar.) Henne

GENERAL COLLEGE

GENERAL INFORMATION

Admission to the General College requires graduation from an accredited high school or satisfactory performance on university entrance tests, but no specific pattern of high school subjects is required. Students who do not qualify for admission to other colleges of the University because of inadequate preparation or poor high school record may remedy these deficiencies or demonstrate their ability to handle work of college caliber through a careful selection of courses in the General College. Students who successfully demonstrate this ability may make application to transfer to another college of the University without undue loss of time or credit.

The degree of associate in arts is conferred by the University upon students who successfully complete a two-year program in the General College.

The regular *Bulletin of the General College*, which may be received upon request from the Office of Admissions and Records of the University, indicates in detail the requirements for the associate in arts degree, general regulations, and additional general information. All students entering the General College for the first time are required to take an over-all comprehensive examination, the results of which will be useful to the student and his adviser in planning his program for subsequent quarters.

For more complete description of the courses during the summer terms, see the regular *Bulletin of the General College*.

A double dagger (‡) indicates courses for which course fees are charged. See Course Fees, pages 14-17.

First Term

3. **Home Life Orientation.** Consideration of the biological, psychological, and sociological foundations of family life. Discussion of adjustment and human relations in present and future home life and factors associated with success or failure in marriage. (3 cred.; all; no prereq.; IV MTWThF; 206WeH) Anderson
4. **Problems of Contemporary Society.** Emphasis on analysis of world problems resulting from the Industrial Revolution; the understanding of the causes of war, unemployment, and overproduction. Contemporary America and the obligations and responsibilities of individuals in contributing to the solution of world problems. (3 cred.; all; no prereq.; I MTWThF; 201WeH) McCune
- 10A.‡ **Human Biology: The Fundamental Similarities in the Living World.** A study of the variety and relationship of living organisms serves to illustrate the general principles in biology. Special emphasis is given to man's place in the world of living organisms. Man's embryonic development, heredity, racial characteristics, and evolution are considered. Films and demonstration laboratories supplement the lectures. (3 cred.; all; no prereq.; II MTWThF; 201WeH) Cieslak
- 10C. **Human Biology: Healthful Living.** The preservation and improvement of health is emphasized in this course. Such topics as cause and prevention of disease, dieting, care of skin and hair, pregnancy, mental health, medical costs, and public health are considered. (3 cred.; all; no prereq.; IV MTWThF; 201WeH) Cieslak
- 23A.‡ **Art Laboratory.** Work in the Art Laboratory gives students actual experience in art production. Problems of the laboratory are individual and may be selected according to the student's own needs and interests. No special skills necessary. (3 cred.; all; no prereq.; II-III MTWThF; 301WeH) Tallon

- 31A. Writing Laboratory: Practice in Effective Writing.** The student's writing abilities are used as a basis for individual instruction in effective written expression. (3 cred.; all; no prereq.; I-II MTWTh; 302WeH) Kivits
- 31B. Writing Laboratory: Organization and Writing.** This course is planned to aid the student in organizing his own ideas clearly and forcefully. The student is encouraged not only to question, analyze, and evaluate what he thinks, but also to present his opinions in critical, purposeful writing. (3 cred.; all; prereq. 31A; III-IV MWF; 302WeH) Kivits
- 32A.‡ Speech Laboratory: Basic Principles of Oral Communication.** Readings and discussions on speech hygiene, analysis of causes and treatment of stage fright, study of language problems, and training in explanatory speaking. (3 cred.; all; no prereq.; I MTWThF; 306WeH) Unes
- 44B. Current History.** The main objective is to encourage students to develop skill in interpreting the news—foreign, government, political, economic, and social—and its relationship to the current of history; news magazines and newspapers serve as points of departure; background materials are stressed to provide historical perspective. (3 cred.; all; no prereq.; III MTWThF; 101WeH) McCune

Second Term

- 10B. Human Biology: How the Living Machinery in Man Works.** This course deals with the body functions of man. The activities of cells, organs, and systems are considered from the point of view of both normal and abnormal physiology. (3 cred.; all; prereq. 10A; II MTWThF; 201WeH) Cieslak
- 30C. Literature Today: Themes in Current Literature.** Three or four books of fiction, drama, or nonfiction are studied intensively, both as interpretations of life and society and as specimens of literature. Each is a representative book by a prominent present-day author, and is used as a basis for comparison with other authors who have dealt with similar themes or used similar techniques. (3 cred.; all; no prereq.; I MTWThF; 206WeH) Draxten
- 31D. Writing Laboratory: Business Writing.** Attention centers on factors important for effective business writing. Business situations serve as a basis for the various types of letters the student writes. The student receives individual instruction as he plans and writes his letters. (3 cred.; all; prereq. 31A; III-IV MWF; 302WeH) Sheldon
- 32A.‡ Speech Laboratory: Basic Principles of Oral Communication.** (See first term) (II MTWThF; 306WeH) Olson
- 37. Social Trends and Problems.** A study of the major trends which are affecting American life, and the impact of culture, conflict, religion, economic changes, population trends, and family status upon individual problems and development of personality. (3 cred.; all; no prereq.; IV MTWThF; 206WeH) Anderson

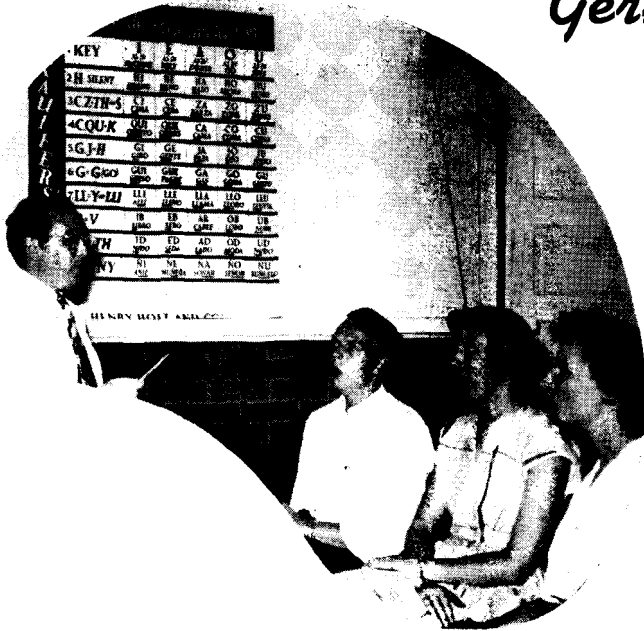
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MODERN LANGUAGES INSTITUTE

*Spanish
French
German*



SUMMER SESSION
June 12 - July 22, 1950

The Bulletin of the
University of Minnesota
Minneapolis 14

L111-18



Why Study a Foreign Language?

The ability to read and to speak the language is fundamental to an understanding of the thought of another people and to the communication of our own to them.

The two main purposes of foreign language study must be always kept in mind. These are its contribution to the humanizing influence of a liberal education and the equipment of the college graduate with ability to make direct contact with the culture and science of at least one foreign country and the people who live in it.

In the present world the ability to speak and read with ease at least one foreign language is more than ever necessary if the mind and the imagination of American youth are to be set free for expansion beyond the narrow horizon of vocational interests and national prejudice.

—Nicholas Murray Butler



University of Minnesota



SUMMER SESSION



Modern Languages Institute



Coordinator James A. Cuneo

Director, Spanish Institute James A. Cuneo

Director, French Institute Jacques A. Fermaud

Director, German Institute Emma Marie Birkmaier



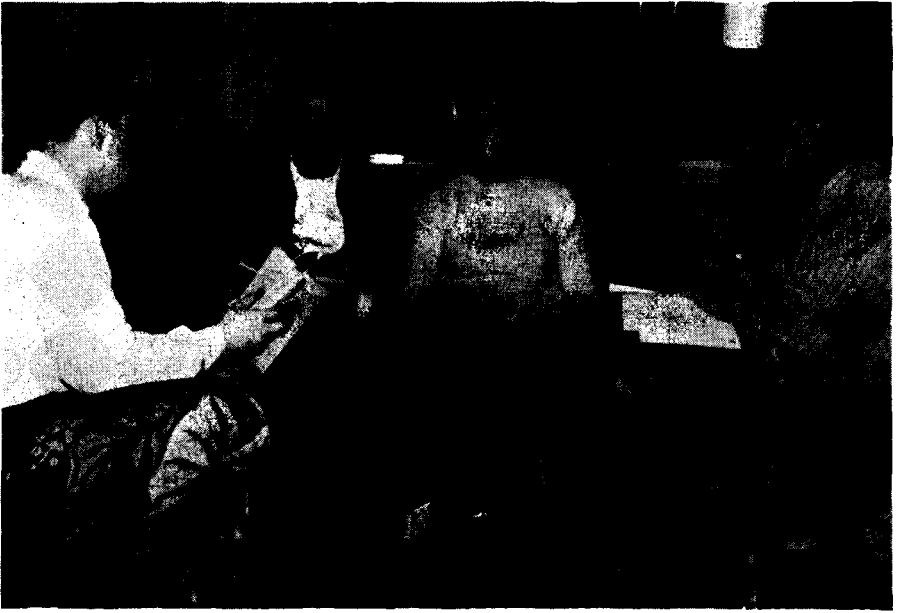
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Modern Languages Institute



In Spanish it's *Casa Hispanica*; in French, *Maison Francaise*; and in German, *Deutsches Haus*. Whatever the language, the object of each Institute is the same. Members have an opportunity to learn the language while absorbing the culture of the language area—and they have fun doing it!

For six weeks members of each Institute speak only the language they are studying. From morning until night they study, eat, play and live in Spanish-American, French or German atmospheres. Even newspapers, magazines and phonograph records are in the language of each Institute.

In a world only 60 hours large all must learn to understand other peoples and their cultures. The Summer Session of the University of Minnesota has long recognized this fact and began an organized program in this direction in 1942 with the establishment of a Spanish-American Institute. This year the program has been expanded to include a German Institute and a French Institute.

VALUE

The Institutes should prove invaluable to (1) teachers or potential teachers of Spanish, German, or French whether or not they are working for graduate degrees; (2) students who wish to satisfy their language requirements; (3) those planning to apply for Fulbright or SPAN scholarships, or other foreign study groups; and (4) men and women training for positions with the government, international organizations, or private business.

RESIDENCE

All activities of the Institutes will be centered in three houses, *Casa Hispanica*, *Deutsches Haus*, and *Maison Francaise*, located along "Language Lane" on University and Twelfth Avenues Southeast. Students registered in the Institutes

will be expected to live in the house of the language they are to study. If a student has a valid reason for not living in the house, he must take meals there and remain at the house until the day's activities are over.

ACTIVITIES

In addition to regular classes each house will conduct evening round-table discussions on aspects of contemporary life and culture in their respective language areas. A well-rounded social program includes picnics, group singing, plays, dances and films.

Acceptance in each Institute implies a promise to use that language exclusively, not only in organized groups, but also at informal gatherings and during meals. To stimulate conversation, native teachers will be assigned to each table of eight students. Students will change seats every other day and instructors will change tables every other week.

Once a week on Thursday night, an "International Open House" will be held. At this festive weekly occasion, members of all three language Institutes participate in programs of music, songs, dances and plays for friends and members of the general public.

ELIGIBILITY AND CREDITS

The Modern Languages Institute is designed to meet the needs of three groups of students:

- I. Those who have completed two quarters or the equivalent of the language to be studied
- II. Those who have had four quarters or the equivalent of the language
- III. Advanced undergraduate and graduate students with a good working knowledge of the language

Students in Group I will receive 10 credits; those in Groups II and III, 9 credits.

COURSES

Courses offered in the Modern Languages Institute are listed under the Departments of German and Romance Languages as follows: German—22, 66, 107; French—22, 58, 108; Spanish—22, 58, 108. Students in Group I will register for Course 22 (5 credits) and for Course 3-4 (5 credits) given on the Minneapolis Campus.

Students in Group II will register for Course 58 (5 credits) in Spanish and French, or in the case of German, 66 (5 credits) and for supplementary courses offered on the Minneapolis Campus not to exceed 4 credits. Students in Group III will register for Course 108 (4 credits) in Spanish and French, or in the case of German, 107 (4 credits) and may elect courses on the Minneapolis Campus not to exceed 5 credits.

The above courses are described under the respective Institutes on pages 4, 6, and 7.

Classes will be conducted in the respective languages using the aural-oral method. Students will practice pronunciation daily by means of phonograph records and tape recorders under the direction of native teachers. Movies will be used to teach the languages and to depict life in each language area. A language clinic will be conducted in each Institute for those students needing special assistance in grammar, written and oral expression. Such students will be assigned to individual staff members for extra work.

Opportunity for practice teaching will be extended to students showing adequate preparation.

Course in Methods—In connection with work in the Institute, the College of Education will offer Ed.C.I. 188, *Advanced Course in the Teaching of Modern Languages* (3 credits). This course is open to all teachers of foreign languages and prospective teachers with advanced standing. New material which has been gathered in the past few years including new techniques for specific objectives will be taken up.

The following areas will be considered: reorganization of the modern language curriculum, role of the language teacher as a resource person, development of the resource unit, use of audio-visual aids, language clubs, evaluation programs with emphasis on aural-oral testing, development of attitudes and appreciation scales, and practical techniques in the classroom. Students will have access to the valuable reference library, teaching materials and the realia collection in the College of Education Modern Language Curriculum Library. Demonstration work will be provided by University High School language students.

COST

Tuition, incidental fee and deposit will be \$46.50. A \$40 laboratory fee brings this to a total of \$86.50. Board and room in any house costs \$85 for the six-week term. Cost of board only varies with the number of meals taken.

Applications and requests for further information should be mailed on or before June 3, 1950 to: Dean of Summer Session, 540 Administration Building, University of Minnesota, Minneapolis 14.

Casa Hispanica

The Spanish Institute has developed a program in which students are given every opportunity to learn and apply practical conversation and at the same time build a deeper understanding of our neighbors to the South and of Spanish culture in general.

Extra-curricular activities are valuable in gaining these ends. The Spanish Institute publishes its own newspaper *El Poncho*, which covers all phases of Institute life and is written entirely in Spanish. To improve pronunciation and master the difficult sounds of the Spanish language, each student is given a name which begins with the trilled "r" or any one of the other letters with sounds needing constant practice. This is done at a ceremony called the *Bautismo* which combines both initiation into the Institute and the adoption of a Spanish name.

Another activity enjoyed by students is the accumulation of photographs, clippings, autographs and other mementos during their stay at the Institute which they later use to make up their *Anuarios* (yearbooks).

PROGRAM OF STUDY

PRACTICAL SPANISH CONVERSATION (Spanish 22) Students will gain a basic active speaking vocabulary and assurance in self-expression. The class will be divided into small groups for vocabulary and pronunciation drills, practice in conversation, and memorization and dramatization. All work is under supervision of native instructors.

ADVANCED PRACTICAL SPANISH CONVERSATION (Spanish 58) Stress will be put on the development of self-confidence in expressing ideas in Spanish. For conversational purposes, students will be divided into small groups under native instructors. Discussions will be based on assigned topics with definite vocabulary preparation and will consist of short debates, oral reports on current events, and brief speeches on different aspects of life in Latin America and Spain.

ESTILO (Spanish 108) The study of essential characteristics of Spanish style and development of a finer feeling for the language, a sense for shades of expression, and a complete mastery of certain grammatical and idiomatic difficulties. Model selections of prose

will form a basis for imitative composition; oral and written reports on assigned topics will be required which will be discussed and criticized from the point of view of style and effectiveness. Students of this group will also be divided into small sections under native guidance for conversational purposes.

Further credits may be earned by students in all groups by taking regular courses on the Minneapolis Campus.

RELATED AND SUPPLEMENTARY COURSES

First Term:

- SPANISH 73—Latin-American Culture, 2 cred., IV TWThF, Cuneo
SPANISH 83—La Novela Hispano-Americana y los Problemas Sociales, 2 cred., III TWThF, Cuneo
SPANISH 140—Contemporary Latin-American Literature: The Novel, 2 cred., II TWThF, LeFort
SPANISH 116—Seventeenth-Century Spanish Literature: Prose, 2 cred., IV TWThF, Grismer
SPANISH 120—Spanish Literature: The Ballad, 2 cred., III TWThF, Grismer
GEOGRAPHY 110—Geography of South America, 3 cred., VI MTWThF, Borchert
HISTORY 95—American Diplomatic History, Part III, 3 cred., IV MTWThF, Warner
JOURNALISM 111—International Communications, 3 cred., II MTWThF, Crumpler
SOC. SCI. 111—Cultural Relations: Instrument of Peace or War?, 3 cred., IV MTWThF, Levi and staff

Second Term:

- SPANISH 176—Contemporary Spanish Poetry, 2 cred., III TWThF, Pattison
SPANISH 250—Nineteenth-Century Spanish Seminar: Galdos, 2 cred., IV TWThF, Pattison
ANTHROPOLOGY 80—The American Indian: A Survey of the Native Cultures of the New World, 3 cred., II MTWThF, Spencer
ECONOMICS 176—International Commercial Policies, 3 cred., IV MTWThF, Stovel
HISTORY 159—Survey of Latin-American History: Part III, 3 cred., IV MTWThF, Allen

STAFF

- James A. Cuneo, Ph.D., Director and Associate Professor of Spanish in charge of Latin-American Culture and Literature, University of Minnesota; Native of Argentina.
Jose M. Gutierrez, Ph.D., Visiting Lecturer on Cultural Panorama of Cuba; Dean, College of Education, University of Havana, Cuba; Native of Cuba.
Emilio C. LeFort, Ph.D., Associate Professor of Spanish, University of Minnesota, in charge of Pronunciation and Diction; Native of Argentina.
Roque Cordero, Instructor in Latin-American Music and Songs; Composer and Guggenheim Fellow; Native of Panama.
Rosa Igarzabal, Instructor in Conversation and Director of Social Activities; Spanish Instructor, State University of Iowa; Native of Uruguay.
Gines M. Maiquez, Instructor in Spanish Composition and Culture; Director, Department of Foreign Languages, New Ulm Public Schools; Native of Spain.
Gladys Miranda, Instructor in Conversation and Dramatics; Spanish Teaching Assistant, University of Illinois; Native of Chile.
Julio Vita, Assistant Director of Social Activities; Native of Argentina.

The Institute will also have the active collaboration of Dorothy Trandeff Michalson and Frances Leslie, U.S.A.; Mrs. Margarita Mills, Guatemala; Miguel Tirado, Puerto Rico; and other Latin Americans studying at the University.

Maison Francaise

The French House is a new feature of the first term of the Summer Session of 1950. The program has been planned to give students a better knowledge of French culture and civilization and a better understanding of problems and life of France in the world of today.

In addition to regular classes, there will be a planned series of evening programs which will include social meetings (games, dancing, etc.) on Mondays; commentaries on history of French music using recorded and live programs, travelogues, art slides and documentary films on Tuesdays; and round-table discussions of contemporary France on Wednesdays. At these meetings such topics will be discussed as home life, education, Parisian theater, existentialism, political parties, movements for unity of Europe, etc. On Thursdays, students will participate in the International Open House; on Fridays, formal lectures will be given by senior staff members or French guest speakers; and on Saturdays, a play or selections will be prepared by students and staff.

There will also be activities planned every other Sunday such as picnics, visits to the Minneapolis Institute of Art or full-length French movies.

PROGRAM OF STUDY

PRACTICAL FRENCH CONVERSATION (French 22) The primary purpose is to build a practical vocabulary and give the student an opportunity to use it in small drill sections under the guidance of native instructors. Naudot.

ADVANCED PRACTICAL FRENCH CONVERSATION (French 58) Students will acquire fluency by presenting short oral reports and participating in debates, etc. They will be divided into small groups under the guidance of native instructors. Meade.

COURS DE STYLE (French 108) Students will be required to make oral and written reports on assigned topics which will be discussed and criticized from the point of view of style and effectiveness. Desgranges.

In addition, students are advised to take regular courses taught in French on the Minneapolis Campus in the morning, earning from two to five extra credits.

RELATED AND SUPPLEMENTARY COURSES

First Term:

FRENCH 117—Seventeenth-Century French Literature: Boileau, La Fontaine, La Bruyere, 2 cred., IV TWThF, Fermaud

FRENCH 156—Balzac and the Beginnings of Realism, 2 cred., III TWThF, Desgranges

FRENCH 159—Contemporary French Novel II: Malraux, St. Exupéry, Sartre, Camus, 2 cred., II TWThF, Fermaud

Second Term:

FRENCH 130—Nineteenth-Century Poetry: Hugo, 2 cred., II TWThF, Clefton

STAFF

Jacques Fermaud, Director and Associate Professor of French, University of Minnesota; Professor, Middlebury French Summer School, 1945-46; Baccalaurcat ès lettres (Angers), Diplômé des Sciences Politiques (Paris), M.A., Ph.D.

Guy Desgranges, Assistant Director and Assistant Professor of French, University of Minnesota; Baccalaurcat ès lettres, licence ès lettres, Diplômé d'Etudes Supérieures (Sorbonne, Paris); Ph.D.

Claude Meade, Instructor and Counselor, Men's Residence; M.A.; Instructor, University of Colorado, 1947-49; Native of France

Paulette Naudot, Instructor and Counselor, Women's Residence; Instructor, Berlitz School of Languages; Native of France.

Marianne Cook, Counselor, Women's Residence; Assistant, International Relations Center, University of Minnesota.

Guest speakers will include Michel Dubois, Licencié ès sciences, ingénieur agronome; Dr. Gabriel C. Nahas; Dr. Bernard Metz; Mlle Monique Charbonnier, Licenciée en droit (Lyon); Mme Suzanne Cargill, pianist from Conservatoire de Paris.

Das Deutsches Haus

The German House, also new to the Summer Session this year, was established on the belief that the German-speaking nations such as Austria, Germany and Switzerland are and will be important in the chain of strong western nations which must promote our western way of life. To understand and cooperate with these nations assumes a good knowledge of the peoples and their language.

The Institute will work toward these aims not only through regular classes but interesting extra-curricular activities. Evening lectures and *Plaudereien* will take up German life and literature with emphasis on the contemporary art, architecture, music, political and economic history, and education.

Several workshops will be organized such as a Drama Workshop in which a study will be made of available German plays for high schools and junior colleges, and several short plays will be presented. Another is a Films and Records Workshop in which interested students may familiarize themselves with native techniques.

Regular sessions with folk dance experts will help teachers and advanced students to prepare and to participate in popular folk dances of Germany and Austria. A study of the use of songs to assist in teaching pronunciation and creating interest in the language class will be made and songs suitable for classroom and club programs will be practiced.

PROGRAM OF STUDY

INTERMEDIATE CONVERSATION AND ORAL PRACTICE (German 22) Intended for students who can understand German fairly well but who need assurance in self-expression and a basic active vocabulary. After a thorough study of the material is made, students will be divided into smaller groups supervised by native teachers.

ADVANCED ORAL PRACTICE AND SELF-EXPRESSION (German 66) Self-confidence in expressing ideas in German will be developed. Daily training in correct German will be based on techniques used by the Army Language Training School together with prepared discussions on assigned topics with definite vocabulary preparation, short debates, oral reports and oral criticisms of books and articles.

GERMAN STYLISTICS (German 107) Advanced students and teachers of German will acquire more fluency as well as a finer feeling for German style, sense for shades of expression and a complete mastery of certain grammatical and idiomatic difficulties. Model selections of prose will form the basis for imitative composition.

RELATED AND SUPPLEMENTARY COURSES

First Term:

GERMAN 132—The "Schwank" of the Sixteenth Century, 3 cred., III-IV TF, Downs

GERMAN 165—Artur Schnitzler, 3 cred., III-IV MTh, Pfeiffer

Second Term:

GERMAN 259—Reading in Major Field, 3 cred., ar., ar., Ramras

STAFF

Emma Marie Birkmaier, Ph.D., Director and Assistant Professor of Education, University of Minnesota; Director of Foreign Languages, University High School; University of Chicago, Middlebury Language Schools, University of Munich and the University of Innsbruck.

Ivar V. Ivask, Philipps University, Marburg/Lahn; Residence in Estonia, Latvia, Lithuania. Ruth Boesenecker, Ph.D., University of Munich; Further study at the University of Geneva, Switzerland, and at the University of Debrecen, Budapest, Hungary.

Walter P. Luderer, Ph.D., University of Vienna; Honorary Fellow in Education, University of Minnesota; Instructor in Berlitz School of Languages.

Heinrich Karl Blechner, University of Vienna; Poet and Journalist in Austria, France, Switzerland and Denmark; Studied in Italy.

Arnold D. Mendel, Real Gymnasium, Duesseldorf; Oberrealschule, Rome; University of London.

Why Study a Foreign Language?

Suggested Reading

1. Sumner Welles, *The Study of Modern Foreign Languages*
2. Joseph C. Grew, *The Importance of Learning Another Language*
3. Nicholas Murray Butler, *Modern Foreign Languages and the International Mind*
4. Chauncey D. Snow, *Modern Foreign Languages and International Business Relations*
5. Frank C. Whitmore, *Modern Foreign Languages; Their Value for the Scientist*
6. H. G. Atkins and H. L. Hutton, *Humanistic and Practical Values of Modern Foreign Languages*
7. Raymond A. Schwegler, *A Psychologist Looks at Modern Foreign Languages*
8. Hayward Keniston, *Underlying Principles of Foreign Language Study*
9. Henry M. Wriston, *A Blind Spot in Education*
10. Henry Grattan Doyle, *Will Translations Suffice?*

The Bulletin of the
UNIVERSITY OF MINNESOTA
LAW SCHOOL

Announcing
1950 SUMMER SESSION

June 12 to August 26
1950



Volume LIII, Number 21

April 18, 1950

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

University of Minnesota Summer Session

LAW SCHOOL

GENERAL INFORMATION: The Law School is located on the Minneapolis Campus of the University within easy reach of the downtown districts of both St. Paul and Minneapolis. Rooming facilities for Summer Session students are readily available. The Law School is accredited by the two accrediting agencies—the American Bar Association and the Association of American Law Schools. Credits are transferable to most other law schools.

ADMISSION AND REGISTRATION: Restrictions of the University on the admission of students not residents of Minnesota are not applicable to attendance during the summer months. However, admission to the Summer Session does not admit to the academic year.

Students desiring to attend will register June 12 and 13. Advance registration after May 15 will be accepted. No preliminary formal application is required unless regular admission for continuance during the academic year is desired. Early notice of intention to attend would be appreciated.

COURSES AND CREDITS: The Law School will offer a complete quarter (June 12 to August 26) of law work with courses for advanced students. Courses for beginning law students are not available. Any student, resident or nonresident, who has completed at least one year of law school work at an accredited school is eligible to register. The credits listed are quarter credits and represent the number of class hours per week which the course carries. Fifteen hours per week represents the normal load. Registration will be for the quarter, not for a single term.

Courses given carry the same number of class hours and credits as the course on the same subject given during the regular year.

Classes are scheduled during the forenoon hours only. None are held on Saturdays.

The courses offered are:

ADVANCED COURSES

Summer Quarter

Private Corporations. (6 credits) Kenneth M. Anderson

Banking. (6 credits) Stanley V. Kinyon

Sales. (6 credits) Robert C. McClure

Administrative Law. (6 credits) Kenneth C. Davis

Conflicts. (6 credits) Monrad G. Paulsen, University of Indiana Law School

Creditors' Rights. (6 credits) Daniel J. Dykstra, University of Utah Law School

Municipal Corporations. (3 credits) William B. Lockhart

Damages. (3 credits) Joseph F. Rarick

Insurance. (3 credits) Joseph F. Rarick

Federal Jurisdiction. (3 credits) William B. Lockhart

FEES: Tuition fees for the quarter are: resident, \$75; nonresident, \$90. Credit hour fee: resident, \$6.25; nonresident, \$7.50. There will be the usual incidental fee of \$14 for which the student receives the privileges of the Coffman Memorial Union, the Health Service, Library, Counseling Bureau, Speech and Hearing Clinic, recreation, *Minnesota Daily*, and the university post-office service. Deposit fee for the quarter, \$2.

FURTHER INFORMATION: Further information may be obtained by writing to the Law School, University of Minnesota, Minneapolis 14, Minnesota.