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The College of Science, Literature,
and the Arts
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GENERAL INFORMATION

1. *Courses of study.*—The courses of study offered to students of this college are summarized on page 11 and are described on pages 14-39.

2. *Admission.*—This college admits those students who have met the admission requirements as published in the University's Bulletin of General Information and give reasonable promise of carrying successfully the courses of study offered in this college. The case of each individual applicant will be decided on the evidence of his previous record either in secondary school or college, of his performance in such aptitude and placement tests as are found reliable for this purpose, and comments, advice, or recommendations received from teachers or officials of the institutions previously attended. In the case of students transferring from other collegiate institutions corresponding information will be taken into account in determining their status in this college.

3. *Admission to the freshman year.*—Students are admitted to this college either by certificate from an accredited secondary school or by examination. For details concerning the requirements in either case consult the Bulletin of General Information for 1938-39, pages 32-37.

NOTE.—The method of admission by examination is especially recommended to high school graduates who have shown superior ability in their high school work but who cannot present the proper units for admission by certificate. Entrance tests given by the University are of the objective type, intended to measure aptitudes for college work rather than specific information in high school fields. No special preparation for the tests is practicable.

4. *Adult special students.*—Persons of maturity (at least 24 years of age) who desire to pursue a special and limited course of study may be admitted by the Students' Work Committee as adult special students. The registration of such students will be under the control of the committee.

Application for registration as an adult special student should be made not later than September 15, December 15, or March 15, depending upon the quarter the candidate desires to enter the college.

5. *Admission to advanced standing.*—The following rules govern students entering this college with advanced standing from some other institution.

- a. Credits of advanced standing are provisional and are finally adjusted by the Students' Work Committee after the student has completed a year's residence. Credits which have been forfeited may be recovered by special examination.
- b. A student entering with advanced standing must earn an average of one honor point per credit for all work in this college counted for graduation or for admission to the Senior College.
- c. A student admitted to the Senior College and failing to meet this requirement may be excluded from the Senior College at any time after the first quarter.

6. *Examinations for advanced standing.*—Any student upon first registration at the University may, with the approval of the Students' Work Committee, be allowed without charge to take examinations for advanced standing in subjects in which the student declares himself to be prepared. Such examinations must be taken within the first six weeks of residence.

7. *Examinations for credit.*—Credit for work done outside of class may be obtained by taking special examinations. Application should be made to the assistant dean for students' work.

8. No student may receive by means of such an examination more than 12 credits in one department or more than a total of 18 credits toward graduation.

9. No credit in beginning language courses may be gained by special examination.

10. *Registration.*—Students are required to register on the days announced in the university calendar. Only in very exceptional circumstances will a student be allowed to register thereafter, and no student will be enrolled after the first week of the quarter. (See paragraph 13, Late Fees.)

11. No student will receive credit for work for which he is not properly registered.

12. *Fees.*—Tuition fee (per quarter)

Residents of Minnesota	\$20.00
Nonresidents	40.00
Credit hour tuition fee (unclassified students, auditors, and others carrying less than full work)	
Residents of Minnesota	1.75
Nonresidents	3.50
Incidental fee (per quarter)	6.00
Matriculation deposit‡ (first quarter only)	
Men	15.00
Women	5.00
Special fees	
Fees for individual courses are specified in the course announcements	
Examination for removal of condition	1.00
Examination for credit (after first 6 weeks in residence)	5.00
Special examination	5.00
Laboratory deposit (required of students registered for courses in chemistry)	5.00
Graduation fee	7.50
Music fees (in addition to tuition) for those electing music	
Courses 11 to 27	
1 individual lesson per week, 2 credits	25.00
2 individual lessons per week, 4 credits	50.00
Class lessons in Courses 11C, 12C, 2 credits	15.00
Courses A, B, C and Courses D, E, F	
1 individual lesson per week, no credit	25.00
Practice fees	
Organ (per hour)	0.20 to 0.40
Piano‡‡ (per quarter)	5.00

‡ Such charges as may be incurred for lockers, library penalties, laboratory breakage, etc., will be deducted from the amount of this deposit and the balance will be refunded by mail upon graduation or after the beginning of the first quarter the student fails to return to the University.

‡‡ Six hours per week (fifty cents per quarter for each additional hour per week).

13. *Late fees.*—The fee for the privilege of late registration or late payment of fees shall be \$2 prior to the day classes begin, on and after which the fee increases at the rate of \$1 per day, provided no student shall pay more than \$10 in fees for late privilege in any given quarter. The fee for late change of registration is \$2.

14. *Auditors.*—Under certain conditions stated below students may be enrolled as auditors and may hear lectures and class discussions regularly without being required to do the work of the course. No regular student may be admitted to classes as an auditor until his junior year.

15. Any mature person not a regular student may be admitted as an auditor to any course under the following regulations:

- a. He shall get an auditor's card at the office of the dean of the college (219 Administration Building) and on it secure the written approval of the instructor in charge of the course, and of the dean.
- b. He shall present such approval to the registrar and pay the usual fee charged for regular membership in such a course. See paragraph 12.

16. Attendance as an auditor does not entitle one to credit or to admission to regular examinations in the course.

17. Any Senior College student may register as an auditor under the same regulations, with this understanding—that unless he has at least a B average, the courses for which he registers both as regular student and as auditor must not exceed the permissible maximum. (See paragraph 2 on page 8.) If he has at least a B average he may register as an auditor for an additional three-credit course.

18. *Grades.*—Four grades, A, B, C, and D, are given for work of varying degrees of merit. The grade D permits a student to register for continuation or dependent courses; and work completed with this grade is counted toward graduation when combined with work of A or B grade in other courses. The grade C indicates work of a quality acceptable for graduation; the grades B and A are given for work of higher degrees of excellence.

Work of inferior grade is marked E (condition) or F (failure). Work which is of at least D grade but, because of circumstances beyond the student's control, not completed, may be marked I (incomplete).

19. *Credits and honor points* are used for convenience in indicating amount and quality of work.

Amount of work is expressed in *credits*. Each credit demands on the average three hours a week of a student's time; that is, one recitation with two hours of preparation, or three hours of laboratory work.

Quality of work is indicated by *honor points*. Honor points are assigned to the various grades on the assumption that work of a quality acceptable for graduation is graded at least C. (See paragraph 18.) Each credit with the grade of C carries one honor point; each credit with the grade of B, two honor points; each credit with the grade of A, three honor points. The grade of D carries no honor points. The grade of F carries

minus one honor point per credit. The penalty cannot be removed by repeating the course with a passing grade.

A student who maintains an average of one honor point per credit is proceeding normally to fulfill the requirements for graduation or for admission to the professional schools. By maintaining an average better than C, a student is able to reduce the amount of work which he is required to complete. (See paragraphs 34 to 36.)

20. The *grade I (incomplete)* cannot be given when the work not completed represents more than one fourth of the quarter's work.

21. An *incomplete* not removed before the end of the first month of the student's next quarter in college becomes a *condition*. The Students' Work Committee may, in special cases, extend this time limit.

22. The *grade E (condition)* is a temporary grade, representing a deficiency which may be removed without repeating the course. A student who has received a condition in a course may register for the continuation or dependent course the following quarter.

23. *Removal of conditions*.—Conditions may be removed by additional work and an examination or, in certain cases, by satisfactory work in the next quarter of the course.

24. In Classics, English (courses in composition), Geology, History, Journalism, Music, Physical Education for Women, Physics, Scandinavian, Speech, and Zoology, conditions may sometimes be removed by passing a continuation course with a grade of C or better, in which case the grade of the first quarter will be recorded as D. A student who desires to remove a condition in this way must obtain the approval of the department, and must notify the registrar's office of his intention within the first week of the quarter. No student who has already failed in the condition examination is permitted to remove the condition by this second method.

25. In the following departments, conditions may be removed only by examination: Anthropology, Architecture, Astronomy, Bacteriology, Botany, Chemistry, Child Welfare, Drawing and Descriptive Geometry, Economics, English (courses in literature), Fine Arts, Geography, German, Home Economics, How To Study, Human Anatomy, Library Instruction, Mathematics, Military Science and Tactics, Orientation, Philosophy, Physical Education for Men, Physiology, Political Science, Preventive Medicine and Public Health, Psychology, Romance Languages, and Sociology and Social Work.

26. The permanent grade resulting from the removal of a condition may in no case be higher than C.

27. Examinations for the removal of conditions incurred during the fall and winter quarters are given during the first thirty days of the succeeding quarter. Examinations for the removal of conditions incurred during the spring quarter are given the week before the opening of the fall quarter.

28. A student who desires to remove a condition by examination should get from the registrar a pamphlet entitled *Condition Examination Schedule* and should follow the instructions contained therein.

29. A condition not made up within one quarter of residence becomes a failure subject to the rules governing failures.

30. The *grade F (failure)* represents a deficiency so serious that the student must repeat the course in order to obtain credit therein.

31. A student receiving a failure in any course shall not be allowed to pursue the continuation of that course the following quarter.

32. Any student receiving a failure in a course which is required in his curriculum must repeat the course the next time it is offered.

33. No course for which a student has received credit may be repeated by him to raise his grade except by special permission of the Students' Work Committee.

34. *Quality credits.*—In some curricula and parts of curricula, the number of credits required of a student may be reduced as follows: For each five honor points in excess of one honor point per credit, the required number of credits will be diminished by one; or, in other words, for each five honor points in excess of one honor point per credit, a student will be given one "quality credit."

35. This regulation applies only to the total number of credits required. It does not apply to other specific requirements of the student's curriculum. It is in force as regards

- a. Admission to the Senior College, the College of Education, the School of Business Administration, and the School of Dentistry.
- b. The Senior College part (exclusive of courses given by the Division of Library Instruction) of any course of study, given entirely within this college, leading to the degree of bachelor of arts or bachelor of science, with this restriction:* To a student registered in the Senior College, quality credits will be given for excess honor points earned in Senior College courses but not for those earned in Junior College courses.
- c. The Senior College part of the work done in this college in the combined courses in Arts and Law and Arts and Dentistry, with the restriction stated in the preceding paragraph (b).

36. This regulation is based on the well-known fact that students of high scholarship have accomplished more than those who have poorer records. Students of higher attainment are thus given the opportunity of completing the work for the B.A. degree in less than four years and entering earlier on their graduate work. Juniors and seniors with high scholastic standing are allowed the privilege of visiting classes§ and of reading under direction; and students who are handicapped by outside work or poor health can thus carry less than full work and still make a normal advance toward graduation.

37. *Junior and Senior colleges.*—The Junior College, consisting of the first two years, offers instruction in the fundamental branches which are required in preparation for the courses leading to the degrees B.A. and B.S.,

* This restriction, which was adopted by the faculty in May, 1936, does not apply to these two groups of students: (1) those who entered our Senior College before September, 1936; (2) those who entered our Junior College before that date and who have entered our Senior College or will enter it with an average of one honor point per credit (in courses taken at this University).

§ See paragraphs 14-17 on page 4.

and for the professional schools. It is expected also that its courses of study will offer preparation for various vocations or will provide a general education for those who do not complete a longer course.

The Senior College, consisting of the third and fourth years, is concerned primarily with the advanced instruction leading to the Bachelor's degrees.

Each college is under the general direction of an assistant dean.

38. Junior College students who are candidates for a degree are listed as freshmen when they have less than 39 credits; as sophomores when they have 39 credits or more.

39. The college distinguishes between Junior College courses, intended primarily for freshmen and sophomores, and Senior College courses, intended primarily for juniors and seniors.

40. Senior College courses appear in the announcement as open to "juniors and seniors" or to "juniors, seniors, and graduates."

41. Some Senior College courses are regularly open to Junior College students who have an average grade of at least C in the prerequisite courses. They are listed under the heading *Senior College Courses* in departmental statements in the Science, Literature, and the Arts section of the *Combined Class Schedule for 1938-39*. Other Senior College courses are open to Junior College students only by special permission of the Students' Work Committee. Courses which carry graduate credit may not be taken earlier than the third quarter of the student's sophomore year.

42. *Election of subjects in other colleges or schools.*—In the senior year, any student registered in the College of Science, Literature, and the Arts may elect not to exceed 6 credits per quarter in any other college or school of this University, provided that (1) the courses are indicated by the dean of the college or school in question and approved by the Advisory Committee of this college as suitable for such election; and (2) no duplication of subject occurs. Courses so taken are counted toward the bachelor of arts degree on the same terms as those taken in the College of Science, Literature, and the Arts.

By resolution of the Board of Regents students in any college electing work in any other college must complete the work so elected before they are allowed to come up for the degree for which they are candidates.

Seniors desiring further information regarding courses open should consult the assistant dean for the Senior College.

GENERAL REGULATIONS

NOTE.—*Students are held individually responsible for the information contained in these pages. Failure to read and understand these regulations will not exempt a student from whatever penalties he may incur.*

1. *Amount of work.*—Students must elect at least 13 credits of work a quarter. To take less than that number, a student must secure permission from the Students' Work Committee.

2. The maximum number of credits for which a student may register is ordinarily 17. After two quarters of residence a student may register for 18 credits provided he has an average of $1\frac{1}{2}$ honor points per credit for the two quarters *previous to the time of registration*, and no condition or failure for the quarter immediately preceding registration. By vote of the faculty the Students' Work Committee has been instructed to make no exception to this rule. A student carrying 18 credits may be required to revise his program if his work shows a serious decline.

3. *Extension and Correspondence Study courses.*—No student enrolled in the college will be allowed to carry work in the Extension Division without permission of the Students' Work Committee. No student may enroll for an extension course if this would increase the number of credits for which he registers beyond the maximum allowed.

4. Credits received in university extension courses are counted as credits in this college only after the student has completed one year of work in the college.

5. *Afternoon work.*—All freshmen and sophomores are expected to elect approximately one third of their work in the afternoon.

6. *Residence.*—To secure any degree from this college a student must earn 45 credits in residence. If a student has transferred from some other college he must spend the last three quarters before graduation in residence in the Senior College and must earn a minimum of 45 credits in residence in the Senior College.

7. *Habitual bad English.*—Any student who, either in speaking or in writing, habitually uses bad English shall be reported by his instructor to the dean with all available evidence. If the dean considers this evidence sufficient, he will require the student to take without credit such further work in composition as the chairman of the Department of English may specify.

8. *Changes in registration.*—After classes have begun, no changes in registration, other than necessary changes, may be made without permission of the Students' Work Committee.

9. When a student's registration in any subject is cancelled at his own request within the first two weeks of any quarter, no standing is recorded. After that time a record of his work is obtained from his instructor. Work of the grade of D or higher will be cancelled without grade; work below the grade of D will be recorded as "dropped with the grade of F."

10. If a student is in any doubt regarding his registration or desires to make any change in it, he should consult his major adviser, the assistant dean of his college, or the chairman of the Students' Work Committee.

11. *Absences.*—No absences without excuse are to be regarded as legitimate. Both tardiness and absence are dealt with by the individual instructor on the assumption that each student is expected to do the full work of the class.

12. A student absent for any reason whatsoever is expected to do the full work of the course. He must make up work lost through delay in registration as in the case of any other absences.

13. *Delinquent students.*—Continued residence in the college is conditioned upon reasonable success in the student's work. Any student who does not make satisfactory progress in the course in which he is registered may be placed on probation by the Students' Work Committee.

14. No student is considered to have a wholly satisfactory standing who fails to secure in the course of any year the normal advance of one honor point for each credit for which he is registered.

15. *Probation.*—A student in the Junior College will be placed on probation if at the close of any quarter or at the time of the midquarter report he is below passing grade in 50 per cent of his work. A student in the Senior College will be placed on probation if he is below passing grade in 40 per cent of his work.

16. A student on probation is in serious danger of being excluded from college if his work does not show immediate and rapid improvement. Subject to the regulations hereinafter stated, the condition and length of the probation are determined by the Students' Work Committee.

17. With the exception of students who refuse to take a serious interest in their work, no student will be excluded from college until he has been on probation at least six weeks.

18. The period of probation continues not more than two quarters. It may be extended if the committee is convinced that failure to show marked improvement is due to causes (other than incapacity) over which the student has no control, and that these causes may reasonably be expected to disappear.

19. Students excluded from this college shall be recorded as (a) transferred, (b) discontinued, (c) dropped.

a. *Transferred.*—Students whose attitude toward their work is satisfactory, but who evidently are pursuing the wrong course, may be transferred to another college at the close of any quarter with the approval of the two colleges concerned and the dean of student affairs.

b. *Discontinued.*—Students who are apparently pursuing the right course, but have been handicapped by conditions over which they have no control (ill health, necessary outside work, etc.) may be required to discontinue their registration until the committee is satisfied that the conditions under which they work are bettered. When such discontinuance takes place, at any time other than the

end of the quarter, the courses for which the student is registered are recorded as cancelled without grade.

- c. *Dropped*.—Students who have clearly shown by their records that they are irresponsible, and who have failed to meet the terms of their probation, shall be dropped.

20. *Readmission*.—Students excluded from college shall be allowed to return only with the permission of the Students' Work Committee.

- a. Students classified as discontinued must present evidence that the conditions which hindered their work have been remedied.

- b. Students who have been dropped may be required to remain out of college until the term of the next year corresponding to that in which the delinquency occurred. Such students must present satisfactory evidence that they have been employed in an occupation demanding intelligence and responsibility, or have successfully pursued subjects of an approved character. At the time when the student is dropped the Students' Work Committee will inform him what type of studies will be accepted for readmission.

21. The cancellation of a student's registration, of his own accord, will not affect his status as a delinquent student or the terms of his readmission. When a student leaves college he will be notified by the registrar's office of his status under these regulations.

22. Students who return under the provision of the preceding paragraphs will be registered on probation. Such students may be dropped at any time that their work is unsatisfactory to the Students' Work Committee.

23. *Eligibility*.—A student who is ineligible to participate in extra-curricular activities because of a condition may become eligible by removing the condition.

A student who is ineligible because of failure in a course required for graduation may become eligible (a) by repeating the course with a passing grade, or (b) by earning an average of one honor point per credit on a program of at least fifteen credits during the quarter immediately preceding participation. The two terms of a Summer Session may count as a quarter for this purpose.

A student who is ineligible because of a failure in a course not required for graduation may become eligible by either of the above methods or by completing one full year of work.

24. *Petitions*.—A student who wishes exception made to any rule of the college should present his request in writing to the Students' Work Committee. Petition blanks may be obtained at 219 Administration Building or 106 or 219 Folwell Hall.

Every student who desires to be heard in regard to his petition will be given such an opportunity by the committee.

COURSES OF STUDY

SUMMARY OF COURSES

The individual subjects of study offered to students in the College of Science, Literature, and the Arts, with information about credits and pre-requisites and with a schedule of hours, days, and classrooms, are given in the University's *Combined Class Schedule for 1938-39*.

The college welcomes students who have definite intellectual interests but who do not expect to graduate or to enter one of the professional schools. Such students may continue in college as long as they maintain a satisfactory standing in the studies they elect. During their junior college years a wide variety of courses is open to them. After that period they may continue work in their fields of interest as nonclassified students under the direction of the Students' Work Committee.

A student who is a candidate for a degree may, while registered in the College of Science, Literature, and the Arts, pursue one of the following courses, described on pages 14 to 39 of this bulletin. These curricula are subject to revision by action of the faculties of the colleges concerned.

Courses given within this college:

1. A course leading to the degree of bachelor of arts, which includes
 - a. A curriculum which provides for concentration and involves the pursuit of major and minor studies in the Senior College (pages 14-18).
 - b. A curriculum in liberal arts which provides for greater breadth of training (pages 14-18).
 - c. A curriculum with specialization in journalism (page 18).
 - d. A curriculum with specialization in music (page 20).
2. Special courses leading to the degree of bachelor of science:
 - a. Course in Library Training (page 22).
 - b. Course in Pre-Social Work (page 23).
3. Courses preparing for admission to the School of Business Administration (page 25), School of Dentistry (page 27), College of Education (page 27), the Course in Nursing Education (page 30), the Course in Interior Architecture in the Institute of Technology (page 31), the Law School (page 32), the Course for Medical Technologists (page 32), and the College of Pharmacy (page 33).
4. A four-year course leading to the degree either of bachelor of arts or of bachelor of science with special training in military science and tactics (page 33).

Combined arts and professional courses:

5. A six-year course leading to the degrees of bachelor of arts and bachelor of architecture (page 34).
6. A six-year course leading to the degrees of bachelor of science in law and bachelor of laws (page 35).

7. A seven-year course leading to the degrees of bachelor of arts and bachelor of laws (page 36).

8. A seven-year course leading to the degrees of bachelor of arts and doctor of dental surgery (page 36).

9. An eight-year course leading to the degrees of bachelor of science, bachelor of medicine, and doctor of medicine (page 37).

10. An eight-year course leading to the degrees of bachelor of arts, bachelor of medicine, and doctor of medicine (page 39).

NOTE.—A unit of the University known as University College arranges special courses of study for individual students whose intellectual interests or professional aims are not provided for by curricula offered in other colleges of the University. For further information, consult Dean Tate, Room 143, Physics Building.

REGULATIONS APPLYING TO FRESHMAN ENGLISH

No student may register for any course in Freshman English without having taken a placement test.

On the basis of placement tests in English, students are:

Exempt from any requirement in English,

Permitted to choose between English A-B-C and Composition 4-5-6,

Assigned to Composition 4-5-6,

Required to make up minimum essentials as a preliminary to Composition 4-5-6.

Students who are exempt from Freshman English may register, if they wish, for English A-B-C or Composition 4-5-6, or for any Junior College courses in English, composition, or speech for which English A-B-C is the prerequisite.

Freshman English is a 15-credit course consisting of 9 credits of literature and 6 credits of composition. Composition 4-5-6 is a 9-credit course in composition. Either course satisfies the requirement in English for graduation or for admission to the Senior College. Students who have already completed one or more quarters of Freshman English in another college should consult Mr. Thomas, 219 Folwell, before registering.

Any student who receives an A in composition in Course A or B or 4 or 5 is exempted from any further requirement in English.

Any student who receives an A or B in Course 4 or 5 may at his option elect the following quarter of A-B-C.

STUDIES FOR BEGINNING FRESHMEN

The following subjects of study are offered to beginning freshmen in the fall quarter of the college year:* English literature and composition; Latin and Greek; German, French, Italian, Spanish, Norwegian, and Swedish; botany, chemistry, geology, physics, and zoology; economics (an intro-

* For students who enter college in the winter or spring quarter the choice of subjects is more limited.

duction to economics, the elements of money and banking, and statistics), history (European and English), and political science; mathematics; military science and tactics; music (theoretical and practical); philosophy (logic, problems of philosophy, and ethics); an introduction to architecture; the history of architecture, sculpture, and painting; freehand and technical drawing, and clay modeling; the art of the Twin Cities; home economics; orientation (a study of "man in nature and society"); physical education. In addition to these subjects which may be studied throughout the year (fall, winter, and spring), the college offers the following short courses which students may find possible to add to their programs at some time during the year: astronomy; human anatomy; human geography; how to study; an introduction to child study; the use of books and libraries; personal health; physiology; sociology.

ADVISERS

Every freshman may have a faculty counselor to whom he can go for help in personal matters, in choosing a vocation, or in planning his study program. This counselor will put the student in touch with specialists in fields in which he may be interested and will arrange for special tests or other sources of information. For this service the student should go to Room 114, Psychology Building.

Each freshman student who has not decided on the general plan of his college course before entrance should begin at once to consider whether he will elect a major study or the curriculum in liberal arts (pages 14-18) or one of the professional courses—social work, journalism, law, medicine, etc. (pages 18-39). He should seek the help of one of the faculty counselors who are appointed to deal with freshman problems. As soon as he has decided on a four-year course in this college, he will be assigned to an adviser who will assist him throughout the four years. In case a student changes his choice of a field of work he will be transferred to an adviser in the new field.

Every student is expected to make the planning of his study program a serious part of his work. The student should plan his program and bring it to his adviser for suggestions and approval. Advisers are available for discussion of student programs at any time during the year.

Freshmen or sophomores who do not have regular counselors should discuss their study programs with the assistant dean for the Junior College, Room 106, Folwell Hall, or with Senior College advisers in lines of work in which they are interested. Discussion with members of the faculty should be attended to early and not left to the registration period, because after registration begins, there may not be time to secure the information which is desirable or to make the necessary arrangements for courses of study which are important in the student's plan.

In no case should the planning of a program be left to the registration period. The chief responsibility of registration officers should be to check and tally the programs which have been prepared in advance.

I. COURSE LEADING TO THE DEGREE OF BACHELOR OF ARTS*

NOTE.—The requirements in this course of study are different in some respects from those published in the bulletin for 1935-36. The essential differences are given in the footnotes on pages 16-18. Any student who was in this college before September, 1936, is allowed to choose either the old or the new curriculum with the provision that whichever one is chosen be followed exactly.

The general purpose of the curriculum is to enable capable students to attain the ends of higher liberal education, allowing each one to do the work best suited to develop his powers and satisfy his interests. Faculty advice is offered to each student in planning his course.

Two general plans of study are offered, one providing for concentration, the other offering opportunity for greater breadth of training. The first plan is the traditional one, involving the pursuit of major and minor studies in the Senior College. The second is a curriculum in liberal arts intended for those who wish to get a broader view of the fields of knowledge or to draw upon a wider range of studies in preparing themselves for life. Graduation honors are open to candidates for the B.A. degree on either plan.

The requirements of the course include the selection of studies according to certain principles and a certain quality in the student's work. For convenience these requirements are stated concretely in terms of time, credits, and grades. Students should understand that the time spent and the credits entered on the books are not the real object but only symbols used in keeping the records.

JUNIOR COLLEGE

The purpose of the specific requirements stated is to prepare those who are candidates for the B.A. degree for satisfactory work in the Senior College. A student will be admitted to the Senior College on the completion of the following work or the equivalent in another recognized institution.

Required Courses and Distribution of Work

1. In four groups of subjects there are specific requirements as follows:

- a. English A-B-C (Freshman English, 15 credits) or Composition 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. All students are required to take a placement test before registering for any course in English or composition. See page 12.
- b. Foreign language, 0 to 20 credits, according to the following schedule:

<i>Amount Presented for Entrance</i>	<i>Amount Required in Junior College</i>
Four years of one language	None
Three years of one language	5 credits in same language
Two years of one language	10 credits in same language
One year of one language	15 credits in same language
Less than a year of one language	20 credits in one language

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

- c. 10 credits* in one of the social studies: anthropology, economics, geography, history, political science, sociology.
- d. 10 credits* in one of the natural sciences: astronomy, botany, chemistry, geology (including laboratory), physics, psychology (including laboratory), zoology.

In addition to these specified studies the student will take studies chosen by himself (electives) to make up the number of credits required. (See the following paragraphs.)

2. In order that the student may be prepared on entering the Senior College to devote his time to Senior College studies, he should examine the prerequisites for the Senior College studies in the fields in which he is interested. By the end of his sophomore year he is expected to be prepared for Senior College studies in at least five departments. The amount of such preparation necessary in the different departments is indicated below:

Anthropology—10 credits	German—through Course 4 (Intermediate German)
Architecture—10 credits	Greek—Courses 1-2, 3 (15 credits)
Astronomy—Astronomy 11 (Descriptive Astronomy) and Mathematics 6 (Trigonometry)	History—9 credits
Botany—10 credits	Italian—Courses 1-2, 3 (15 credits)
Chemistry—through Course 12-13 (Qualitative Chemical Analysis)	Journalism—Courses 13, 14-15 (Introduction to Reporting, Newspaper Reporting)
Economics—Course 6-7 (Principles of Economics)	Latin—through Course 12 (Vergil)
English Composition — Course A-B-C (Freshman English) or Course 4-5-6 (Freshman Composition), and Course 27-28 (Advanced Writing)	Mathematics—through Course 30 (Analytic Geometry)
English Literature — Course A-B-C (Freshman English); or Composition 4-5-6 (Freshman Composition) and 6 additional credits in literature; or 10 credits in Course 21-22-23 (Introduction to Literature)	Music—10 credits
Fine Arts—9 credits	Norwegian—through Course 5 (Introduction to Norwegian Literature)
French—through Course 3-4 (Intermediate French)	Philosophy—10 credits
Geography—10 credits	Physics—9 credits
Geology—10 credits, including 4 credits in laboratory	Political Science—9 credits
	Psychology—10 credits, including 4 credits in laboratory
	Sociology—10 credits
	Spanish—through Course 3-4 (Intermediate Spanish)
	Speech—9 credits
	Swedish—through Course 10-11 (Advanced Swedish)
	Zoology—10 credits

3. If the student elects the curriculum for concentration he must plan to secure the necessary preparation for a major sequence in consultation with a major adviser. He should apply at the departmental office and be assigned to a major adviser. If he chooses the curriculum in liberal arts he should elect elementary courses in those departments in which he wishes to do advanced work in his junior and senior years. He should apply to the Senior College office (219 Folwell Hall) for assignment to an adviser.

The choice between the curriculum for concentration and the curriculum in liberal arts should be made by the student not later than the end of his sophomore year. He is at liberty to consult with Senior College advisers at any time that he desires and will be assigned to an adviser whenever he has chosen his course.

* Or 9 credits in a year course.

Amount and Quality of Work

The student must earn a total of 90 credits, with an average of one honor point per credit, or a smaller number of credits determined as follows: For every five honor points in excess of one honor point per credit, the number 90 is diminished by one. (Credits thus earned by excess honor points are called "quality credits." See paragraphs 34, 35, 36 on page 6.)

A student entering with advanced standing from some other institution must complete the same requirements. He must secure an average of one honor point per credit for work done in this University. Quality credits can be earned only in connection with the work done in this University.

For a student who completes the two-year Basic Course in military science and tactics, the number of credits required will be reduced from 90 to 84.

While the quality of work normally expected is expressed by an average of one honor point per credit, improvement in the quality of the work as the student progresses will be taken into account by the Students' Work Committee. If improvement and other considerations are accepted in part as the basis of promotion, the average of one honor point per credit will be required in the last 45 credits. Students who wish to enter the Senior College on these terms should file a petition in the Senior College office, 219 Folwell Hall.

While the normal time of residence in the Junior College is two years, this may be shortened by the application of quality credits, or it may be necessary for the student to spend a longer time in order to demonstrate ability to do work of the quality expected. *The student is expected to enter the Senior College as soon as he has completed the preparation required. Credits earned in the Junior College after the student is qualified to enter the Senior College may not ordinarily be counted to meet the requirements of the Senior College. Extra credits may be counted toward meeting the Senior College requirements for graduation only with the approval of the Senior College office at the time of transfer to the Senior College.*

SENIOR COLLEGE

The student is expected to devote his time to Senior College studies except in so far as, in the judgment of his Senior College adviser, additional elementary studies definitely contribute to his intellectual development.

The normal period of residence is six quarters and the normal credit requirement is 90 credits. The student must maintain an average* of one honor point per credit in the work done while in residence in the Senior College. The number of credits may be diminished and the period of residence shortened by application of quality credits earned in Senior College courses† during residence in the Senior College.

* This average of one honor point per credit is not required of these two groups of students: (1) those who entered our Senior College before September, 1936; (2) those who entered our Junior College before that date and who have entered our Senior College or will enter it with an average of one honor point per credit (in courses taken at this University). For such students the only credit and honor point requirements for graduation are these: 180 credits, 180 honor points, and an average of one honor point per credit in the work of the major sequence.

† For the two groups of students referred to in the preceding footnote, all quality credits earned in this University count as a part of the total number of credits required for graduation.

Requirements in the Curriculum for Concentration

1. Each student electing this curriculum must complete a coherent and progressive sequence of Senior College courses, known as a major sequence, as specified by the department which offers it. Such major sequences are offered by the following departments: Anthropology, Architecture, Astronomy, Bacteriology, Biostatistics,† Botany, Chemistry, Classics, Economics, English, Fine Arts, Geography, Geology and Mineralogy, German, History, Journalism, Mathematics, Music, Philosophy, Physics, Physiology, Political Science, Psychology, Romance Languages, Sociology and Social Work, Speech, Zoology. The courses constituting a major sequence in any department are announced in the University's *Combined Class Schedule for 1938-39*.

A student must maintain an average of one honor point per credit in the work of the major sequence.

2. A minor sequence* of 15 credits, or two minors of 9 credits each, in Senior College courses. These must be taken in some department or departments other than his major department and in addition to his major sequence.

3. The whole plan of studies in the Senior College must receive the approval of the major adviser.

Requirements in the Curriculum in Liberal Arts

Each student who wishes to elect this curriculum must submit to the assistant dean for the Senior College a plan of study in which the subjects and courses chosen are related to one another and to the student's purpose and are intelligently arranged in a working program. If this plan gives evidence of a central purpose, the student will then be assigned to an adviser who will examine and discuss the plan with him. The program as approved by the adviser is to be carried out in harmony with the general requirements.

An indefinite variety of study programs may be recognized under this heading. They may serve the purpose of the student who is interested in general culture, in literary or artistic pursuits, in comparative literature, in the integration of fields of study ordinarily separated by departmental organization, in critical interpretation, or in any activity, preparation for which requires the student to draw upon several fields. This curriculum is intended to provide for the making of programs by individuals to suit their own interests or needs.

In conference with his adviser, the student will work out a program for his Senior College years. When this program has been approved by the adviser and the assistant dean, it becomes a contract between the college and the student, and no change in it may be made without the written per-

* Only one minor sequence of 9 credits is required of each student in these two groups: (1) those who entered our Senior College before September 1936; (2) those who entered our Junior College before that date and who have entered our Senior College or will enter it with an average of one honor point per credit (in courses taken at this University).

† Courses in Biostatistics are given by the Department of Preventive Medicine and Public Health. (See p. 84 of the University's *Combined Class Schedule for 1938-39*.) The major sequence in Biostatistics consists of Courses 110 (Biometric Principles, 5 credits), 120 (Correlational Analysis, 5 credits), 130 (Statistical Interpretation, 5 credits), and 15 credits in related courses approved by Professor Treloar. The prerequisites for it are 18 credits in biological science or mathematics through analytic geometry, and permission of Professor Treloar.

mission of the adviser. The adviser represents the college in approving the individual's program.

REQUIREMENTS FOR GRADUATION

For graduation a student must satisfy all specific requirements stated above.

It is ordinarily expected that a student who enters as a freshman will spend four years (twelve quarters) in residence in the college. The period of residence may be shortened by the application of quality credits or by taking examinations for credit (see paragraphs 7, 8 on page 3). If a student has transferred from some other college he must spend the last three quarters before graduation in residence in the Senior College and must earn a minimum of 45 credits in residence in the Senior College.

The credit requirement for graduation is: 180 credits with an average* of one honor point per credit, or a smaller number of credits as provided in the above rules governing the Junior College and the Senior College, respectively.

For a student who completes the two-year Basic Course in military science and tactics, the number of credits required in the Junior College will be diminished by six; for a student who completes the two-year Advanced Course, the number of credits required in the Senior College will be reduced by eighteen.

JOURNALISM†

Professional training for journalism is provided by a major in journalism in the curriculum leading to the degree of bachelor of arts, for which the requirements are given on pages 14-18. The course is built upon the principle that a well-trained journalist must possess a broad cultural training, a prerequisite to successful journalistic work, plus a sound working knowledge of the theory and technique of his profession.

The student's distinctly journalistic training begins in his sophomore year with a course in reporting, which he may enter if he has satisfied the scholastic requirements of the department.

No student may enroll in sophomore journalism courses unless he has an average of C in the total courses taken in his freshman year and a similar average in the required freshman work in English. Exceptions to this rule can be made only under unusual circumstances and then only by permission of the Students' Work Committee on recommendation of the chairman of the Department of Journalism.

The student begins the Senior College major sequence in journalism after satisfying the usual requirements for admission to the Senior College, described on pages 14-16. Altho a student may meet these requirements in his

* This average of one honor point per credit is not required of these two groups of students: (1) those who entered our Senior College before September, 1936; (2) those who entered our Junior College before that date and who have entered our Senior College or will enter it with an average of one honor point per credit (in courses taken at this University). For such students the only credit and honor point requirements for graduation are these: 180 credits, 180 honor points, and an average of one honor point per credit in the work of the major sequence.

† For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

own way, the Department of Journalism recommends the following courses of study for the freshman and sophomore years:

1. English A-B-C (Freshman English) or Composition 4-5-6 (Freshman Composition), unless the student is exempt from the requirement in English (see page 12.)
2. French or German, to meet the foreign language requirement.
3. Economics or history or political science or sociology, to meet the social studies requirement.
4. Psychology (with laboratory) or zoology, to meet the natural science requirement.
5. Advanced Writing (Composition 27-28); Introduction to Reporting (Journalism 13); and Newspaper Reporting (Journalism 14-15); which are prerequisites for the Senior College major sequence in journalism.
6. Electives to make the required total of 90 credits.

Recommended electives are: Political Science 1-2-3 (American Government and Politics); Political Science 15 (Elements of Political Science); Political Science 25 (World Politics); Sociology 1 (Introduction to Sociology); Sociology 6 (Social Interaction); Economics 6-7 (Principles of Economics); at least nine credits in history.

The Senior College curriculum is arranged to offer training for metropolitan journalism, small daily or weekly journalism, including newspaper advertising and business management aspects of the publishing industry, magazine writing and editing, advertising and publicity work, radio writing; and, in co-operation with the College of Education, for teaching journalistic writing and supervising student publications in high schools and junior colleges.

When students enter the Senior College they are advised to select their elective work for preparation in special fields. Editorial courses are designed to train students in news gathering, writing and editing, feature and magazine writing, newspaper administration, and magazine editing and administration. Business courses train them in newspaper and periodical advertising, circulation problems, and business management methods. Students electing business sequences may take minor work in advertising and marketing in the School of Business Administration, together with a course in the psychology of advertising.

The major sequence in journalism in the Senior College is as follows: Course 51-52 (News Editing) (51 for women; 51-52 for men); Course 55 (Advertising and Newspaper Typography); Course 69 or Course 73-74 (Newspaper and Magazine Articles); Course 101 (The Reporting of Public Affairs) (for men); Course 109-110 (History of Journalism); Course 140-141-142 (Contemporary Affairs); and 9 additional credits to be chosen in conference with the major adviser. Students of marked ability may substitute for these 9 additional credits in journalism Senior College courses in other departments with the approval of the major adviser in journalism. Women students who do not elect Courses 52 and 101 must substitute other journalism courses of equivalent hours.

The department offers a minor sequence for students in the College of Agriculture, Forestry, and Home Economics, the Institute of Technology, and the School of Business Administration.

A minor sequence for students in the College of Education provides training for those who wish to enter teaching.

MUSIC*

To secure the degree of bachelor of arts with a major in music a student must fulfill the requirements of both the Junior and Senior Colleges as stated on pages 14-18 of this bulletin. He must secure 144 credits in courses other than practical music (piano, voice, etc.). During the first two years, he should register for English A-B-C (Freshman English) or Composition 4-5-6 (Freshman Composition), unless exempt from the requirement in English; foreign language (0 to 20 credits, as indicated on page 14); History 11-12-13 (Medieval History); Psychology 1-2 (General Psychology) and Psychology 4-5 or 7 (Introduction to Laboratory Psychology); and the following courses in music: 1, 2, 3 (Ear Training); 4, 5, 6 (Harmony); 7-8 (Counterpoint); 34-35-36 (History of Music). In the following two years he must complete one or two academic minors (see page 17), and earn from 27 to 30 credits in fields emphasizing one of the following branches of music; composition; history; normal piano (a training course in piano teaching). During the four years he must earn 30 credits in practical music.

For more specific information as to required courses, consult the statement of the Department of Music in the University's *Combined Class Schedule for 1938-39*.

For a course in music education leading to the degree of bachelor of science in education and a teacher's certificate see the Bulletin of the College of Education.

HONORS COURSE PLAN

A student who has met all the requirements for admission to the Senior College may be enrolled for the Honors Course upon the approval of the department in which he wishes to pursue his major study.

Each student enrolled in the Honors Course will be put under the immediate direction of a member of his major department of professorial rank who shall be known as his tutor.

A part of the student's Senior College work will consist of reading or other individual studies done under the direction of his tutor. Work done in this way will be accepted as a substitute for a part or the whole of the major sequence and of the elective work of the usual curriculum.

A student electing this plan will be governed by the announcement of his major department and the direction of his tutor as to number of courses, attendance at classes, and general methods to be pursued.

The requirements for minor studies are not modified by this plan at present.

When the tutors of a department report at the end of any quarter that a student is not making satisfactory progress in the Honors Course, the student will be registered as a candidate in the regular course. In this case the tutors will report blanket credits equivalent to the work actually done.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

The student can then arrange to complete his major sequence either in the same department or in another.

For the year 1938-39 Honors Courses are offered by the Departments of Anthropology, Economics, English, Fine Arts, French, Latin, Political Science, Psychology, Sociology and Social Work, and Zoology.

GRADUATION HONORS†

The degree B.A. may be awarded *cum laude*, *magna cum laude*, or *summa cum laude* upon the recommendation of the Committee on Honors.

Honors are awarded only to students who have a scholastic record of two honor points per credit in all work carried. A student who has this record will be awarded the degree B.A. *cum laude*.

Students wishing to become candidates for the higher honors (*magna cum laude*, *summa cum laude*) must signify their intention not later than the beginning of the third quarter before graduation. Students are admitted as candidates upon the recommendation of the Senior College adviser with the approval of the Committee on Honors. The committee will not admit as a candidate a student who has limited his Senior College work to the minimum requirements in major and minor subjects.

With the approval of the Committee on Honors the candidate may pursue a course of reading in lieu of any or all elective courses. Near the close of the senior year the candidate will take a special examination which may touch upon any part of the field of his college course. In this comprehensive examination the candidate should show (a) an acquaintance with the chief literature and sources of information in the fields studied, and (b) ability to discuss, with intelligence and clear reasoning, questions or problems upon which he has had opportunity to secure the necessary information. Such questions may be new to the student. The object is to test the student's ability to bring facts and theories to bear upon problems presented in the examination. The examination should be a test not of memory but of assimilation, of culture, and of power to command or use the knowledge which courses of study have put within the student's reach. Candidates who pass this examination will, upon recommendation of the committee, be awarded the degree B.A. *magna cum laude*.

A candidate whose standing in the comprehensive examination is satisfactory and who in addition presents an acceptable critical paper, a piece of creative work, or a thesis embodying the results of original research will, upon recommendation of the committee, be awarded the degree of B.A. *summa cum laude*. The preparation of the paper should be begun early in the senior year.

The degree B.S. *cum laude* will be awarded to students who have an average of two honor points per credit in all their work.

Students may be accepted as candidates for the higher honors in courses leading to the B. S. degree and in combined arts and professional courses provided they present an equivalent of the work required for graduation honors in the general course leading to the B.A. degree.

† Students who enter with advanced standing are eligible to become candidates for honors if they will have earned 75 credits of work in residence before graduation.

COURSES IN THE GENERAL EXTENSION DIVISION

A student who takes courses in the General Extension Division in classes in St. Paul, Minneapolis, or Duluth and wishes to count them toward a Bachelor's degree given by the College of Science, Literature, and the Arts must meet all curricular requirements of this college as stated in the bulletin. This means that:

- a. Before beginning work in the Senior College with a view to graduation, the student shall apply for Senior College standing and be enrolled by the assistant dean for the Senior College.
- b. He shall be assigned to a Senior College adviser and shall complete all the Senior College studies under the direction of the adviser.
- c. He shall complete any required work, either of major or minor sequences or of any other nature, in this college if it is not offered in the General Extension Division.
- d. He must observe any specific requirements which may be adopted hereafter, such as comprehensive examinations on either Junior College or Senior College work.

For the adjustment of irregularities in his curriculum the student will get advice from the assistant dean for the Senior College or from his major adviser.

A student who does not conform to these regulations may apply for standing in the Senior College on the same terms as a student transferred from some other institution.

Students who have not taken class work in one of the cities named must meet both curricular and residence requirements.

CREDIT IN THE GRADUATE SCHOOL

A student lacking not more than nine credits toward graduation may, upon petition, receive graduate credit for a limited amount of work taken as an undergraduate. No graduate credit will be given unless the student has made previous arrangements with the Graduate School. Courses taken for graduate credit will not carry credit toward the Bachelor's degree.

With the permission of the assistant dean for the Senior College, undergraduates lacking not more than nine credits toward graduation may be registered also in the Graduate School. Permission will be granted only in exceptional cases.

II. COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE

A. COURSE IN LIBRARY TRAINING*

For a special course in library training, leading to the degree of bachelor of science, a student must first complete satisfactorily three years of academic work. During these three years the student must secure at least 135 credits, and an average of one honor point per credit for all credits earned.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

(This number of credits required may be reduced by application of the "quality credit" rules given in paragraphs 34, 35, 36 on page 6.) The student must complete the requirements for admission to the Senior College, given on pages 14-16, and is subject to all the regulations which govern the work of other Arts students. During his third year the student will elect work in this college, subject to the approval of the assistant dean for the Senior College. He must complete his academic requirements before beginning the courses in Library Instruction. During the fourth year a student will elect not less than 45 credits from courses given by the Division of Library Instruction, and must maintain an average of one honor point per credit for all the credits earned. Under present conditions of unemployment it is a decided advantage to take this course *after* the completion of a full four-year collegiate course leading to the degree of B.A. or B.S. rather than as the fourth year of such a course.

The curriculum of the Division of Library Instruction includes a special course in training for hospital librarianship, given in the spring quarter and followed by a six weeks' internship. At least two academic quarters of approved courses in library training and approved courses in psychology and premedical subjects are required for admission.

For more specific information see the Bulletin of the Division of Library Instruction obtainable from the registrar.

B. PRE-SOCIAL WORK*

This curriculum prepares for the professional course in social work, which is a graduate course requiring not less than five quarters to complete and more often six quarters. In order to plan the work wisely, students are advised to consult with the social work advisers in the offices of the Department of Sociology and Social Work early in their course. The organization of the course aims to give the undergraduate the fundamentals of a broad modern education.

Junior College

The work of the first two years, taken in the Junior College, consists of the regular academic requirements, with the usual language requirement optional, and fundamental courses in sociology, economics, psychology, and political science required.

The amount and quality of work to be done in the first two years to meet the requirements for admission to the Senior College are the same as in the course leading to the degree of bachelor of arts. (See the paragraphs under the heading *Amount and Quality of Work*, on page 16.)

The specific subject requirements for the first two years are as follows:

- English A-B-C (Freshman English) or Composition 4-5-6 (Freshman Composition) or exemption from the requirement. (See page 12.)
- Sociology 1 (Introduction to Sociology).
- Sociology 6 (Social Interaction) or Sociology 14 (Rural Sociology).
- Sociology 45 (Social Statistics).

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

Sociology 49 (Social Pathology).
 Economics 6-7† (Principles of Economics).
 Political Science 1-2-3 (American Government and Politics).
 Psychology 1-2 (General Psychology).
 Zoology 1-2-3 (General Zoology); or Physiology 1 (Elements of Physiological Chemistry) and Physiology 2 (Elements of Physiology).
 Electives to make the required total (normally, 90 credits).

Recommended electives are: History 1-2, 3 (European Civilization, Social and Economic History of Modern Europe) or Philosophy 1, 2, 3 (Problems of Philosophy, Logic, Ethics); Speech 1-2-3 or 5-6 (Fundamentals of Speech) or Composition 27-28-29 (Advanced Writing); modern language.

Senior College

In the Senior College students continue background theory courses and begin orientation courses in social work. The student is expected to devote his time to Senior College studies except in so far as, in the judgment of his Senior College adviser, additional elementary studies definitely contribute to his intellectual development.

The normal period of residence is six quarters and the normal credit requirement is 90 credits. The student must maintain an average* of one honor point per credit in the work done while in residence in the Senior College. The number of credits may be diminished and the period of residence shortened by application of quality credits earned in Senior College courses§ during residence in the Senior College.

The specific subject requirements for the third and fourth years of this curriculum are as follows:

- Sociology 53 (Elements of Criminology); 60 (Social Protection of the Child); 90 (Survey of Social Work); 91 (Field Observation of Social Work); 119 (The Family).
 Preventive Medicine 50 (Public and Personal Health) or 53 (Elements of Preventive Medicine and Public Health); 57 (Health of Infant and Preschool Child); 61 (Mental Hygiene) or Psychology 144-145 (Abnormal Psychology).
 Home Economics 30 (Introduction to Nutrition); 89 (Home Management with Special Reference to Low Income Families).
 Economics 82, 83, 84 (Competition and Monopoly in Modern Industry, The Inequality of Incomes, Comparative Economic Systems), unless the student has had Economics 6-7 (Principles of Economics), or its equivalent.
 Nine credits from the following courses in sociology:
- | | |
|----------------------------|---------------------------------------|
| 100. Social Psychology | 114. Rural Social Institutions |
| 101. Social Organization | 115. Religion As a Social Institution |
| 102. Contemporary Penology | 120. Social Life and Cultural Change |
| 103. Sociology of Conflict | 123. Methods of Social Investigation |
| 110. Rural Organization | 160. Population Problems |
- Electives to make the required total (normally, 90 credits).

* This average of one honor point per credit is not required of these two groups of students: (1) those who entered our Senior College before September, 1936; (2) those who entered our Junior College before that date and who have entered our Senior College or will enter it with an average of one honor point per credit (in courses taken at this University). For such students the credit and honor point requirement for graduation is 180 credits and 180 honor points.

† Students may omit Econ. 6-7 and take Econ. 82, 83, 84 instead in their junior or senior year.

§ For the two groups of students referred to in the preceding footnote, *all* quality credits earned in this University count as a part of the total number of credits required for graduation.

Requirements for Graduation

For graduation a student must satisfy all the specific requirements stated above.

It is ordinarily expected that a student who enters as a freshman will spend four years (twelve quarters) in residence in the college. The period of residence may be shortened by the application of quality credits or by taking examinations for credit (see paragraphs 7, 8 on page 3). If a student has transferred from some other college he must spend the last three quarters before graduation in residence in the Senior College and must earn a minimum of 45 credits in residence in the Senior College.

The credit requirement for graduation is 180 credits with an average† of one honor point per credit, or a smaller number of credits as provided in the rules governing the Junior College and the Senior College, respectively.

For a student who completes the Basic Course in military science and tactics, the number of credits required in the Junior College will be diminished by six; for a student who completes the Advanced Course, the number of credits required in the Senior College will be diminished by eighteen.

Satisfactory completion of the four years' work of this curriculum leads to a degree of bachelor of science but not certification in social work.

The graduate years of the professional course in social work offer technical courses in the theory of social work and in field work with individuals and groups including social case work with families and children, medical social work, group work, rural social work, public welfare administration, visiting teacher's work, and work with Indians. All students must meet the general requirements of the Graduate School. Upon completion of a satisfactory program of social work courses in class and field work approved by an adviser in social work and totaling not less than 60 credits, the student may receive a certificate of social work. Upon satisfactory completion of additional study fulfilling the requirements of the Graduate Course in Social Work the student is entitled to the degree of master of arts. For full information regarding professional preparation for social work see the Bulletin of the Graduate School and the special bulletin of the Graduate Course in Social Work.

III. COURSES PREPARING FOR ADMISSION TO THE PROFESSIONAL SCHOOLS

A. PREBUSINESS COURSE*

To be eligible for admission to the School of Business Administration, the student must present ninety (90) credits, in addition to credits given for physical education, earned in a recognized college or university with one honor point per credit or a smaller number of earned credits which, together with quality credits, will total a minimum of ninety (90). One

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

† See asterisk (*) footnote on preceding page.

quality credit is granted for every five honor points in excess of one honor point per credit.

Quality credits earned in the Junior College may be applied only toward the ninety credits required for admission to the School of Business Administration. In other words, a student who has a surplus of honor points above the number required to complete ninety credits may not apply these for credit in the School of Business Administration. Any excess credits, however, other than quality credits, may be applied toward electives in the School of Business Administration.

The requirements for admission are as follows:

1. Freshman Composition (Comp. 4-5-6) or Freshman English (Eng. A-B-C) or exemption from requirement. (See page 12.)
2. Nine credits in mathematics or *one* of the following laboratory sciences: botany, chemistry, geology, physics, or zoology.
3. Nine credits in *one* of the following social sciences: geography, history, political science, or sociology.*
4. Ten credits in Principles of Economics (Econ. 6-7).
5. Sufficient electives to complete the minimum of ninety (90) credits required for admission. The following courses should, if possible, be taken during the first two years, for most of them are prerequisites to certain courses in the core group:
 - Introduction to Economics (Econ. 1)
 - Elements of Money and Banking (Econ. 3)
 - Elements of Statistics (Econ. 5)§
 - Elements of Accounting (Econ. 20)¶
 - Principles of Accounting (Econ. 25-26)

Students who do not elect the above courses during the freshman and sophomore years will be required during the first quarter in residence in the School of Business Administration to take

- Money and Banking (B.A. 57)
- Statistics Survey (B.A. 70)
- Elementary Accounting: Combined Course (B.A. 62)

In addition certain courses are required in special sequences in the school. These course prerequisites should be included in the Junior College program wherever possible. The major sequences and special course prerequisites are as follows:

1. Accounting: Mathematics of Investment (Math. 20), (prereq. Math. 8)
2. Advertising: General Psychology (Psy. 1-2)
3. Foreign Trade: General Psychology (Psy. 1-2); 9 credits in political science; reading knowledge of a foreign language
4. Finance: Mathematics of Investment (Math. 20), (prereq. Math. 8)
5. Industrial Administration: (See Bulletin of the Institute of Technology)
6. Insurance: General Psychology (Psy. 1-2); Mathematics of Investment (Math. 20), (prereq. Math. 8)
7. Merchandising: General Psychology (Psy. 1-2)
8. Personnel Management: General Psychology (Psy. 1-2)
9. Secretarial Training: General Psychology (Psy. 1-2); Secretarial Training: Typewriting (Econ. 32-33)
10. Statistics: Trigonometry (Math. 6); Commerce Algebra (Math. 8)
11. Department Store Training: General Psychology (Psy. 1-2); Secretarial Training: Typewriting (Econ. 32-33)
12. Office Management: General Psychology (Psy. 1-2); Secretarial Training: Typewriting (Econ. 32-33); Mathematics of Investment (Math. 20), (prereq. Math. 8)

* Social Statistics (Soc. 45) not accepted in fulfillment of this requirement.

§ Credit not granted in Econ. 5 to students who have had Social Statistics (Soc. 45).

¶ Students who have had a high school course or experience in bookkeeping will be admitted to Econ. 25 by passing a placement test. For other students Elements of Accounting (Econ. 20) is a prerequisite to Econ. 25.

B. TWO-YEAR PREDENTAL COURSE*†

The two-year predental course required for admission to the School of Dentistry is a part of the six-year course in dentistry leading to the degree of doctor of dental surgery. During the two years of prescribed work students are registered in this college and subject to its regulations. It is desirable that students should have had chemistry and higher algebra in high school. The required courses are listed below.

1. Inorganic Chemistry 1-2-3 or 4-5 (General Inorganic Chemistry)
2. Inorganic Chemistry 11 (Qualitative Chemical Analysis)
3. Organic Chemistry 1-2 (Elementary Organic Chemistry)
4. English A-B-C (Freshman English) or Composition 4-5-6 (Freshman Composition) or exemption from the requirement. (See page 12.)
5. Physics 1a-2a-3a§ (Introduction to Physical Science, with laboratory included), 12 credits; or Physics 1-2-3 (Introduction to Physical Science, without laboratory), 9 credits. The 12-credit course, with laboratory, is recommended.
6. Zoology 1-2-3 (General Zoology)
7. Drawing, economics, history, Latin or a modern language (high school or college), political science, psychology, sociology, and speech are recommended as electives to make up a total of 90 quarter credits. (For each five honor points in excess of one honor point per credit, the number 90 is diminished by one.)

C. COURSES PRELIMINARY TO THE COLLEGE OF EDUCATION

All students who desire to receive a state teacher's certificate upon graduation from the University of Minnesota must be graduates of the College of Education. In most cases students register in that college at the beginning of their junior year. In certain special four-year and five-year curricula, however, they should register in the College of Education at the beginning of their freshman year or as soon thereafter as they have made their curriculum choice. The special four-year curricula are:

Art Education	Physical Education for Women
Industrial Education	Music Education
Physical Education for Men	

Special five-year curricula leading to the degree of master of education are in the following fields:

Art Education	Physical Education for Men
Music Education	Physical Education for Women
Natural Science	

In curricula for Agricultural and Home Economics Education the preliminary work is done in the College of Agriculture, Forestry, and Home Economics. (See the bulletin of that college or the Bulletin of the College of Education.)

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

† For the three-year predental course, which is a part of the seven-year course in Arts and Dentistry, see page 36.

§ Students who have had a course in trigonometry may substitute for this requirement in physics the one which was printed in the bulletin of this college for 1937-38: Physics 3 and 4 (Elements of Mechanics, with laboratory), and one of the combinations 23 and 24 (Heat, with laboratory), 33 and 34 (Optics, with laboratory), 43 and 44 (Electricity, with laboratory).

For all other general and special curricula the prescribed work of the first two years† is done in the College of Science, Literature, and the Arts.

The following general requirements apply to all students entering the College of Education at the beginning of their junior year:

1. A minimum of 93 credits for men and 95 credits for women, carried with an average of one honor point per credit. (For each five honor points in excess of one honor point per credit, the number 93 or 95 is diminished by one.) For men 3 of these credits and for women 5 credits shall be in physical education. (No credit is granted for physical education courses by the College of Science, Literature, and the Arts; but upon transfer to the College of Education, the student will receive the credits and honor points earned in those courses.)

2. The student must have completed 6 credits in general psychology.

3. At the time of entrance to the College of Education a student must present a certificate from the Students' Health Service indicating that he is free from physical defects that would prevent the successful pursuit of educational work.

4. At the time of entrance to the College of Education each student will be given a general examination designed to show his capacity to pursue professional curricula in education.

*Curricula Which Include Preliminary Work in the College of
Science, Literature, and the Arts*

I. A GENERAL COURSE PRELIMINARY TO THE COLLEGE OF EDUCATION
WITH MAJORS AND MINORS IN ACADEMIC SUBJECTS*

Students preparing to teach academic subjects in senior high schools and to qualify for the state high school standard certificate must have one major and one or more minors in subjects taught in high schools. The College of Education offers majors and minors in the following fields: English, speech, journalism; German, Latin, French, Scandinavian, Spanish; geography, history, political science, sociology; botany, chemistry, physics, zoology; mathematics. The specific requirements for the different majors and minors are given in the Bulletin of the College of Education and in the departmental statements in the University's *Combined Class Schedule for 1938-39*. Special combinations of majors and minors are provided in the natural sciences and social studies curricula.

Students looking forward to high school teaching should enroll as pre-education students as early in their course as possible. They should select majors and minors early and with regard to the demands of high schools. Before entering the College of Education the student must meet certain specific requirements in addition to those listed above:

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

† Five quarters in the curricula in Nursing Education and Public Health Nursing. See page 30.

1. The credits presented for entrance, exclusive of credits in physical education, must be earned in the following groups of college courses:

- Group A English
- Group B Foreign languages: German, Greek, Latin, Romance Languages, Scandinavian
- Group C Social sciences: Anthropology, Economics, Geography, History, Political Science, Sociology
- Group D Natural sciences: Astronomy, Botany, Chemistry, Geology and Mineralogy, Physiology, Physics, Psychology, Zoology
- Group E Mathematics
- Group F Journalism, Fine Arts, Orientation, Speech, or such other courses in other colleges or departments of the University as are approved by the College of Education

2. Within the general requirements listed above the student during his high school and Junior College years must have completed the required work indicated under A, B, C, and D below. At least 20 credits in Groups B, C, and D must be completed in college.

Subject	In High School	In College
A. English	3 years	and 9 credits in composition
B. Language	3 years in one language	or 20 credits in one language
	or	
	2 years in one language	and 10 credits in same language
	or	
	1 year in one language	and 15 credits in same language
C. Social sciences	2 years	or 10 credits in one department
D. Natural sciences	2 years	or 10 credits in one department

NOTE.—In lieu of the specific course requirements indicated in the language group a student may take a comprehensive examination in an elected language to be conducted by a committee appointed by the dean of the College of Education.

3. Within the total credits stipulated under paragraph 1 a student must meet, in fields of study which are represented in prevailing high school curricula, the following requirement: at least 15 credits in a major field and at least 10 credits in each of two minor fields. The purpose of this requirement is to prepare the student for the study of the advanced courses necessary to the completion of satisfactory teaching majors and minors.

II. COURSES PRELIMINARY TO THE FOUR- AND FIVE-YEAR SPECIALIZED CURRICULA IN THE COLLEGE OF EDUCATION

The College of Education provides training for many different kinds of educational work: for positions as superintendents of schools, high school and elementary school principals, elementary school supervisors, teachers in normal schools and teachers colleges, educational counselors, school psychologists; teachers of special subjects and of special classes; school librarians, visiting teachers; positions in junior high schools, elementary schools, kindergartens, nursery schools, public health nursing, nursing education, and school health work. In all cases except the special four-year and five-year curricula previously mentioned the preliminary work is done in the College of Science, Literature, and the Arts. The Junior College work, however, is selected to meet the professional needs, and specific courses are required.

The student should consult the Bulletin of the College of Education for the requirements of his curriculum and should confer with the adviser for that curriculum early in his course.

The specialized curricula offered by the College of Education based upon two years' work in the College of Science, Literature, and the Arts are:

Commercial Education	Elementary Education
Library Methods	Speech Pathology
Natural Sciences	Teachers of Subnormal Children
Social Studies	Visiting Teachers
Junior High School Education	Educational Administration or Supervision
Kindergarten and Nursery School Education	Educational Psychology
	Professional Education of Teachers

Credits earned in required courses in Art Education, Industrial Education, and Physical Education will be granted upon transfer to the College of Education.

Professional training for administrative and supervisory positions, the teaching of professional subjects, school counselors, school psychologists, and for other specialized work is secured by taking a fifth year in the Graduate School with a major in some field of education.

III. COURSE PRELIMINARY TO NURSING EDUCATION AND PUBLIC HEALTH NURSING IN THE COLLEGE OF EDUCATION AND IN THE MEDICAL SCHOOL*

For the first five quarters of the five-year curriculum in Nursing Education and Public Health Nursing the student is registered in the Junior College. She must complete the requirements listed below, and must earn an average of one honor point per credit.

English A-B-C (Freshman English) or Composition 4-5-6 (Freshman Composition) or exemption from the requirement. (See page 12.)

Physiology 2 or 4. Course 2 (Elements of Physiology) has no prerequisite.

Course 1 (Elements of Physiological Chemistry) is recommended as an elective to be taken with Course 2. Course 4 (Human Physiology) has zoology and chemistry as prerequisites. It is regularly offered in the Summer Session for those who cannot get Course 2 or Course 4 during the regular college year. Students who can make arrangements to take Physiology 50 (a five-credit course in physiological chemistry) and Physiology 51 (a six-credit course in human physiology) are advised to take them in place of Courses 1, 2, or 4.

Sociology 1 (Introduction to Sociology).

Psychology 1-2 (General Psychology).

Electives, exclusive of courses in physical education, to make a total of 75 credits for the work of the five quarters. (For each five honor points in excess of one honor point per credit, the number 75 is diminished by one.) The student's first choice of electives should include 10 credits in one of the social sciences. Other recommended courses are: Zoology 1-2-3 (General Zoology), 10 credits; Chemistry 1-2 or 4-5 or 6-7 or 9-10 (General Inorganic Chemistry), 8 or 10 credits; Home Economics 30 (Introduction to Nutrition), 2 credits; Preventive Medicine and Public Health 3 and 4 (Personal Health and Health Problems of Adult Life), 4 credits; Bacteriology 41 (General Bacteriology), 5 credits; Child Welfare 40 (Child Training), 3 credits; Philosophy 3 (Ethics), 5 credits; History 1-2 (European Civilization), 10 credits.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

Physical Education, six quarters. One quarter of this requirement may be completed after registering in the School of Nursing. No credit is granted for physical education courses in the College of Science, Literature, and the Arts; but upon transfer to the College of Education, the student will receive the credits and honor points earned in those courses.

Upon completion of the above requirement the student registers in the School of Nursing for two and a half years. After that she registers for three quarters (1) in the College of Education, with a major in nursing education, or in public health nursing combined with health education or (2) in the Medical School, with a major in public health nursing. For information about nursing subjects see the Bulletin of the School of Nursing.

D. COURSE PRELIMINARY TO TRAINING IN INTERIOR ARCHITECTURE IN THE INSTITUTE OF TECHNOLOGY*

This course offers students the opportunity to prepare themselves for professional work in interior design and decoration.

During the first two years, the student is registered in this college. He must complete the Junior College requirements in English, foreign language, social studies, and natural science, given on pages 14 and 15; the courses in architecture (listed below) which are required of freshmen and sophomores who are candidates for the bachelor of arts degree with a major in architecture; and additional credits, if any are necessary, to make a total of 90 credits for the two years' work. (For every five honor points in excess of one honor point per credit, the number 90 is diminished by one.)

At the beginning of his course, the student should consult the School of Architecture about electives.

During the third and fourth years, the student is registered in the Institute of Technology and upon the satisfactory completion of the prescribed work, amounting to 102 additional credits, he receives the degree of bachelor of interior architecture.

COURSES REQUIRED IN THE FIRST TWO YEARS

	CREDITS
English A-B-C (Freshman English) or Composition 4-5-6 (Freshman Composition) or exemption from the requirement. (See page 12)	0 to 15
Foreign language (See Junior College Requirements, page 14)	0 to 20
One of the social studies (See Junior College Requirements, page 14)	9 or 10
One of the natural sciences (See Junior College Requirements, page 14)	9 or 10
Architecture 1-2-3 (Introduction to Architecture)	3
Architecture DP-I (Drawing and Painting, Grade I)	6
Architecture DP-II (Drawing and Painting, Grade II)	6
Architecture AD-I (Architectural Design)	15
Architecture 4-5-6 (Graphic Representation)	6
Electives to make the required total (normally, 90 credits)	

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

E. COURSES PRELIMINARY TO THE LAW SCHOOL*

Students in the University preparing to enter the Law School register in the College of Science, Literature, and the Arts. Ninety credits of academic work are required for admission to the Law School. An average of at least one honor point for all credits earned up to the time of admission is also required. Excess honor points do not reduce the number of credits required.

Before trying to plan their college course preliminary to the Law School, students should read carefully the statements about the combined courses in Arts and Law which are given on pages 35-36.

The following course has been outlined by the faculty of the Law School for the two years of college study required:

	CREDITS
1. English A-B-C† (Freshman English) or Composition 4-5-6† (Freshman Composition)	15 or 9
2. Philosophy 1, 2, 3 (Problems of Philosophy, Logic, Ethics)	15
3. Political Science A-B-C (Introduction to Government)	9
4. Economics 6-7 (Principles of Economics)	10
5. History 70-71-72 (English Constitutional History)	9
6. Psychology 1-2 (General Psychology)	6
7. Economics 27 (Accounting Survey)§	5
8. Electives to make the total at least 90 credits. Foreign language (0 to 20 credits according to the schedule given in paragraph 1b on page 14) and natural science (9 or 10 credits as indicated in paragraph 1d on page 15) should be included in these electives by students taking the combined course leading to the degrees of bachelor of arts and bachelor of laws which is outlined in Section VII on page 36. Other suggested electives are: English History or American History, Economics, Political Science, Sociology, and Speech.	

The specific subjects listed above are not required for *admission* to the Law School or for the nonprofessional degree of bachelor of science in law, but they (or substitutes approved by the dean of the Law School) are required for the professional degree of bachelor of laws. Candidates for the latter degree who lack any of these subjects on entering the Law School must take them before beginning their third year in the Law School. They cannot be carried along with the law course, but may be taken in Summer Session.

F. COURSE FOR MEDICAL TECHNOLOGISTS*

A four-year course in medical technology is offered by the College of Science, Literature, and the Arts and the Medical School.

With the development of laboratories in clinics, hospitals, and schools,

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

† If a student takes Composition 4-5-6 rather than English A-B-C, or if he omits freshman English composition because he is exempted from that requirement, the Law School recommends that he get at least six credits in more advanced courses offered by the Department of English.

§ This course in accounting, which is a special course for prelegal students, will be offered for the first time in the spring quarter of 1938-39. It will not be open to students who have had Economics 20 (Elements of Accounting, 3 credits). Students who have taken that course may get more work in accounting by taking Economics 25-26 (Principles of Accounting, 3 credits per quarter).

medical technology is a fair field for women at the present time. Men are not advised to take the course.

The satisfactory completion of the prescribed course leads to the degree of bachelor of science in medical technology. During the first two years, the student is registered in this college and must earn 90 credits, with an average of one honor point per credit. (For each five honor points in excess of one honor point per credit, the number 90 is diminished by one.) The required courses are listed below. (These four should be taken in the freshman year: English, chemistry, French or German, zoology.)

1. Inorganic Chemistry 1-2-3 or 4-5 (General Inorganic Chemistry).
2. Inorganic Chemistry 11 (Qualitative Chemical Analysis).
3. A reading knowledge§ of French or scientific German.
4. Zoology 1-2-3 (General Zoology).
5. Physics 1-2-3¶ (Introduction to Physical Science).
6. Composition 4-5-6 (Freshman Composition) or English A-B-C (Freshman English) or exemption from the requirement (See page 12).
7. Analytical Chemistry 7 (Quantitative Analysis).
8. Organic Chemistry 1-2 (Elementary Organic Chemistry).
9. Zoology 21 (Histology).
10. Bacteriology 41 or 101 (General Bacteriology or Medical Bacteriology)

Students transferring from other colleges without these courses must complete them before entering the Medical School.

For the work in the Medical School consult the special bulletin obtainable at the office of the registrar.

Further information may be obtained by addressing Dr. W. A. O'Brien at the University of Minnesota Hospitals, Minneapolis, Minnesota.

Advisers.—During their freshman year students in this curriculum may consult advisers in the Junior College office (Room 106, Folwell Hall). After their freshman year they must submit their registrations for approval to special advisers in the main laboratory on the fourth floor of Elliot Memorial unit of the University of Minnesota Hospitals.

G. PREPHARMACY COURSE

For recommendations for one year's work preliminary to the College of Pharmacy, consult the bulletin of that college.

IV. MILITARY SCIENCE AND TACTICS

Credit for advanced courses in military science.—A graduate of a Basic Course, R.O.T.C., who expects to remain in the University at least two more years, may be selected by the professor of military science and tactics to pursue an Advanced Course, provided he signs a contract with the University and the government by which he agrees to complete the Advanced Course,

§ Courses 1, 2, 3 or 3A, 30-31-32 or 33-34 in German or Courses 1, 2, 3, 4 in French (20 credits) ordinarily give a student the required reading knowledge. German is recommended except for students who have begun the study of French and desire to continue it.

¶ This Course 1-2-3 (9 credits) is not required of students who took the old Course 1-2 (8 credits). Neither course is required of students who entered college before September, 1936, if they have had high school physics or one of the substitutes specified in the bulletin of this college for 1935-36.

R.O.T.C., in this or any other institution where such course is given, to devote five hours per week to the military training prescribed, and to attend one summer training camp.

In any course of study (given entirely within this college) leading to the degree of bachelor of arts or bachelor of science, the total number of credits required for graduation will be reduced by eighteen for any student who completes the work of a two-year Advanced Course, R.O.T.C.

A student enrolled in an Advanced Course, R.O.T.C., is provided with a regulation officer's uniform and receives from the government a fixed monetary allowance while enrolled in this course, except during the period of summer training camp, when he is paid at the rate prescribed for the seventh grade in the Army.

All students who complete the Advanced Courses, R.O.T.C., if recommended by the professor of military science and tactics and the president of the University, will be commissioned in the Officers' Reserve Corps, Army of the United States.

V. SIX-YEAR COURSE IN ARTS AND ARCHITECTURE LEADING TO THE DEGREES OF BACHELOR OF ARTS AND BACHELOR OF ARCHITECTURE*

During the first four years of this course the student is registered in the College of Science, Literature, and the Arts and follows the plan of study prescribed for a bachelor of arts degree with a major in architecture. The requirements for that degree are given on pages 14-18.

The work of the four years should include the following courses:

Required for the Major Sequence

COURSE No.	TITLE	CREDITS
Arch. 1-2-3	Introduction to Architecture	3
Arch. 4-5-6	Graphic Representation	6
Arch. DP-I	Drawing and Painting, Grade I	6
Arch. DP-II	Drawing and Painting, Grade II	6
Arch. 51-52-53	History of Architecture	6
Arch. 54-55-56	History of Architecture	6
Arch. 57-58-59	Building Materials and Methods	6
Arch. AD-I	Architectural Design, Grade I	15
Arch. AD-II	Architectural Design, Grade II	18

Additional Special Requirements

Mathematics 6, 7, 30	Trigonometry, College Algebra, Analytic Geometry	15
Mathematics and Mechanics 91, 92, 93	Calculus, Mechanics for Architects, Strength of Materials	12
Civil Engineering 38, 39, 41	Stresses in Structures, Structural Design, Rein- forced Concrete	9

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

Of the courses listed above, Civil Engineering 38, 39, 41 (9 credits) is not a part of the work required (normally 180 credits) for the bachelor of arts degree. It is an extra requirement which must be taken as a prerequisite for the work of the last two years of this six-year course in Arts and Architecture.

During the last two years of the course, or upon completion of the requirements for the bachelor of arts degree, the student is registered in the School of Architecture of the Institute of Technology to complete the requirements for a bachelor of architecture degree as prescribed in the Bulletin of the Institute of Technology for the five-year course in architecture.

COMBINED COURSES IN ARTS AND LAW

With respect to the degrees mentioned in the two combined courses in Arts and Law (VI, VII below), the bachelor of arts degree is conferred on recommendation of the College of Science, Literature, and the Arts. Two degrees are conferred on recommendation of the Law School, namely a nonprofessional degree of bachelor of science in law, and the professional degree, bachelor of laws. The degree of bachelor of science in law is conferred on those candidates who maintain an average of at least 68 in the work of each of two years in the Law School, and an average of at least 70 for the work of the two years. After the first two years of work in the Law School are completed, a new registration is required for the professional degree of bachelor of laws, and in no case will a student be admitted as a candidate for this degree unless he has credit for the specific college subjects listed on page 32 (or substitutes approved by the dean of the Law School) and has an average of at least 75 in one of the two years in the Law School required for the degree of bachelor of science in law.

VI. SIX-YEAR COMBINED COURSE IN ARTS AND LAW, LEADING TO THE DEGREES OF BACHELOR OF SCIENCE IN LAW AND BACHELOR OF LAWS*

This course requires two years of college work and four years in the Law School.

Students who complete the two years of college work required for admission to the Law School, stated on page 32, in the College of Science, Literature, and the Arts of this University, or in some other accredited college, and have 90 credits, exclusive of quality credits, with an average of one honor point per credit for all credits earned, become eligible for the degree of bachelor of science in law on completion of two years in the Law School. Law work may be selected to suit the needs of the student, and may be restricted to commercial law for students desiring a preparation for business. Students completing this course may register for the degree of bachelor of laws under the conditions above stated, and may thus secure the two degrees in six years.

* There are two combined courses in Arts and Law. Students interested in either one should read (1) the requirements for both, (2) the preliminary paragraph entitled "Combined Courses in Arts and Law," above, and (3) the paragraph entitled "Courses Preliminary to the Law School" (page 32).

VII. SEVEN-YEAR COMBINED COURSE IN ARTS AND LAW,
LEADING TO THE DEGREES OF BACHELOR OF ARTS
AND BACHELOR OF LAWS*

This course requires three years of college work and four years in the Law School. The first two years of the college work may be taken in any accredited college, but the third year must be taken in the College of Science, Literature, and the Arts of this University. All three years of college work may be taken before entering the Law School, or two years before entering the Law School, and the third year after the completion of one year or more of law work. The latter plan enables the student to select college work in which his law course may have developed an interest.

Students in this combined course must, before transferring to the Law School, complete the requirements for admission to the Senior College of the College of Science, Literature, and the Arts, stated on pages 14-16. These requirements include a foreign language and a natural science. (See paragraphs 1b, 1d on pages 14-15.) The student must secure at least 90 credits with an average of at least one honor point per credit for all credits earned. He must also secure, either before entering the Law School or after completing one year or more of the law course, 45 additional college credits, of which at least 30 must be of Senior College grade, with an average of at least one honor point per credit. This number of credits required may be reduced by application of the "quality credit" rules given in paragraphs 34, 35, 36 on page 6. This third year of work must be approved by the assistant dean for the Senior College of the College of Science, Literature, and the Arts. In order to satisfy the requirements for the degree of bachelor of laws, the three years of college work must also include the subjects specified on page 32 for the prelaw course (or substitutes approved by the dean of the Law School).

The degree of bachelor of arts is conferred when the 135 credits of college work specified above and at least the first year of the course in the Law School, with the standing required by that school for graduation, are completed. The degree of bachelor of laws is conferred when the work of all seven years is completed.

VIII. SEVEN-YEAR COURSE IN ARTS AND DENTISTRY,
LEADING TO THE DEGREES OF BACHELOR OF
ARTS AND DOCTOR OF DENTAL SURGERY†

During the first three years of this course, the student does his work in the College of Science, Literature, and the Arts, subject to the regulations of the college, and must secure at least 135 credits, with an average of one honor point per credit for all credits earned. (This number of credits required may be reduced by application of the "quality credit" rules given in

* There are two combined courses in Arts and Law. Students interested in either one should read (1) the requirements for both, (2) the preliminary paragraph entitled "Combined Courses in Arts and Law" (page 35), and (3) the paragraph entitled "Courses Preliminary to the Law School" (page 32).

† Only students who have completed the required work in the College of Science, Literature, and the Arts before entering the professional school will be permitted to avail themselves of the privilege of securing the B.A. degree in this combined course.

paragraphs 34, 35, 36 on page 6). He must complete the requirements for admission to the Senior College, which are given on pages 14-16, and also the work in chemistry, mathematics, physics, and zoology prescribed for admission to the School of Dentistry (see page 27).

During his third year, the student elects work in this college subject to the approval of the assistant dean for the Senior College. The work of the freshman and sophomore years in the School of Dentistry, exclusive of technical and practical work, when completed according to the standards required by that school, counts as the equivalent of the fourth year (45 credits) of the Arts course.

COURSES LEADING TO THE DEGREE OF DOCTOR OF MEDICINE

There are two eight-year courses of study which lead to the degree of doctor of medicine. (See IX, X, below.) Each of them requires three full years of college work (135 credits exclusive of quality credits) which must include the courses prescribed for admission to the Medical School. In the first one (IX, below), the student may freely choose the elective courses to make up the total of 135 credits. He will receive the degree of bachelor of science after he completes two years of work in the Medical School. In the second of the two courses (X, below), the student must meet the requirements for admission to the Senior College of Science, Literature, and the Arts which he should enter, normally, after two years of residence in the Junior College. His program for the third year must be submitted for approval to the assistant dean for the Senior College. He will receive the degree of bachelor of arts after he completes satisfactorily one year of work in the Medical School.

IX. EIGHT-YEAR COURSE IN SCIENCE AND MEDICINE, LEADING TO THE DEGREES OF BACHELOR OF SCIENCE, BACHELOR OF MEDICINE, AND DOCTOR OF MEDICINE*§

For admission to the Medical School in the academic year 1938-39 the minimum requirement will be, as it has been in the past, two years of college work, amounting to 90 credits, with an average of at least one honor point per credit.

Beginning with the academic year 1939-40 the minimum requirement for admission will be three years of college work, amounting to 135 credits†, with an average of at least one honor point per credit.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule for 1938-39*.

† The following quotation from the bulletin of the Medical School applies to students who will be applicants for admission in the academic year 1939-40: "The total number of credits for admission to the Medical School required of students who do their premedical work at Minnesota may, at the discretion of the Admissions Committee, be diminished in the case of superior students, under the quality credit rule of the College of Science, Literature, and the Arts. Required courses may not be omitted unless special permission is obtained from the Admissions Committee of the Medical School."

§ There are two eight-year courses leading to the degree of doctor of medicine. Students interested in either one should read (1) the requirements for both, and (2) the paragraph entitled Courses Leading to the Degree of Doctor of Medicine, above.

The premedical work, for which the student is registered in the College of Science, Literature, and the Arts, must include the required courses listed below or their equivalent as approved by the Students' Work Committee of the Medical School.

Required Courses

- Composition 4-5-6 (Freshman Composition) or English A-B-C (Freshman English) or exemption from the requirement. (See page 12.)
- Zoology 1-2-3 (General Zoology). Zoology 83 (Introduction to Genetics and Eugenics, three credits) will be required for admission to the Medical School beginning with the academic year 1939-40.
- Inorganic Chemistry 11 (Qualitative Chemical Analysis), Analytical Chemistry 7 (Quantitative Analysis), and Organic Chemistry 1-2 (Elementary Organic Chemistry), with the elementary courses prerequisite to them. Physical Chemistry 107-108 (Elementary Physical Chemistry, eight credits) will be required for admission to the Medical School beginning with the academic year 1939-40.
- Physics—Students who have had Physics 3 (Elements of Mechanics) may complete the requirement by taking any three of Courses 13 (Acoustics), 23 (Heat), 33 (Optics), 43 (Electricity). Those courses will be offered for the last time in 1938-39. For other students the requirement is Physics 4-5-6 (General Physics, 15 credits).
- German sufficient to secure a reading knowledge. Students may meet this requirement by passing German 30-31-32 or 33-34 (Medical German), or by taking a special examination after completing two years of college German. This examination is conducted by the German Department.
- Psychology 1-2 (General Psychology, six credits) will be required for admission to the Medical School beginning with the academic year 1939-40.

The following subjects are recommended as electives: English composition and literature, speech, advanced zoology (such as comparative anatomy), physics, physical chemistry, freehand drawing, history, Latin, French, higher mathematics, biostatistics or statistics, psychology, sociology, and cultural subjects generally. General Bacteriology, a Medical School subject, may not be presented for admission to the Medical School.

For admission to the Medical School, a candidate's record must show a number of honor points at least equal to the total number of credits in the group of required subjects; also a number of honor points at least equal to the total number of credits in all subjects. (A higher average is exacted of nonresidents applicants.) He must take a medical student's aptitude test and a battery of tests for premedical students given by the University Testing Bureau. The scores of these tests are considered by the Students' Work Committee in advising students and determining admission. A student applying for admission for the fall quarter must do so before April 1 and must have satisfied all requirements before July 1. Applications for admission in the fall quarter of 1939-40 should be made by December 1, 1938. All admissions are subject to the limited registration regulations of the Medical School.

The work during the third and fourth years is taken in the Medical School and is credited toward the degree of bachelor of science. To secure this degree, a student, in addition to the requirements for admission, must have completed the first two years of the medical course and have passed, with a "C" average, the comprehensive examinations in these years.

Students who have completed elsewhere three or more years of collegiate

or university work which includes the required subjects specified above and which is in other respects the full equivalent of the three years of academic work required in this eight-year course, will be awarded the degree of bachelor of science on recommendation of the faculty of the Medical School, provided they meet the scholarship requirements stated above.

The foregoing regulations governing the quality and amount of pre-medical training required for admission to the Medical School will be enforced for those who present the minimum amount of work. In cases of mature and superior students, especially such as have taken degrees and have made special progress along some line (even tho it may not have been closely related to medicine), concessions may be made. Cases under this paragraph will be considered individually upon petition to the dean of the Medical School.

A broad general education is considered fundamental to medical study, but it should be borne in mind that no student can pursue the medical course to advantage without knowledge of biology, chemistry, and physics.

X. EIGHT-YEAR COURSE IN ARTS AND MEDICINE, LEADING TO THE DEGREES OF BACHELOR OF ARTS, BACHELOR OF MEDICINE, AND DOCTOR OF MEDICINE*§

During the first three years of this course, the student is registered in the College of Science, Literature, and the Arts, subject to the regulations of the college, and must secure at least 135 credits, with an average of one honor point per credit for all credits earned. He must complete the requirements for admission to the Senior College, given on pages 14-16, and also the work in chemistry, mathematics, physics, psychology, zoology, and foreign language prescribed for the eight-year course in Science and Medicine (page 37).†

During his third year, the student elects work in this college subject to the approval of the assistant dean for the Senior College. The first year of the course in the Medical School, when completed with the standards required by that school, counts as the equivalent of the fourth year (45 credits) of the Arts course.

For admission to the Medical School, a student's record must show a number of honor points at least equal to the number of credits in the group of required subjects; and also a number of honor points at least equal to the total number of credits. A higher standard is exacted of nonresident applicants. The student must have a reading knowledge of German and must be accepted by the Medical School under the limited registration regulations of that school. Exceptions to these requirements may be granted to superior students on petition to the Students' Work Committee of the Medical School.

* Only students who have completed the required work in the College of Science, Literature, and the Arts before entering the professional school will be permitted to avail themselves of the privilege of securing the B.A. degree in this combined course.

† For recommended electives and the restrictions governing them, see page 38.

§ There are two eight-year courses leading to the degree of doctor of medicine. Students interested in either one should read (1) the requirements for both, and (2) the paragraph entitled Courses leading to the Degree of Doctor of Medicine on page 37.

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Bulletin of
University of Minnesota

DEPARTMENT OF AGRICULTURE
SHORT COURSES



1938-39

VOL. XLI

NO. 41

JULY 20 1938

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

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SHORT COURSES offered by the Department of Agriculture of the University of Minnesota are given for two main purposes: First, to meet the requests of specific groups for information bearing on their special problems, and second, to give opportunity for people of the state generally to secure new and up-to-date information on agriculture and home economics. Enrollments are limited for a few of the highly specialized courses that give more intensive training. Otherwise, these short courses are open to anyone who desires to attend. This bulletin has been prepared to give general information on all short courses offered during the year ending June 30, 1939.

FOR FURTHER INFORMATION

Write to L. A. Churchill, Director of Short Courses, University Farm,
St. Paul, Minnesota



Short Course Visitors Registering at University Farm

FARM AND HOME WEEK

January 16-20, 1939

Farm and Home week has become established through 38 years as the annual opportunity for farm men and women to come to the University Farm and avail themselves of the services of the various divisions of the Department of Agriculture. It offers five days of classes, conferences, entertainment, and enjoyment.

Above all else, Farm and Home Week is a big one-week school in what is latest and best in everyday farming and homemaking management and practice. Two class hours each forenoon and three each afternoon will be the general plan this year. During each of these hours, as many as a dozen different lectures, discussions, and demonstrations will be going on at once. Each visitor will have a complete program and may go where he pleases.

Three special conferences are held in connection with the Farm and Home Week each year:

(1) Community Leadership Conference, including community leader training schools, work of community councils, parliamentary practice, duties of officers, planning and carrying out community programs, promoting attendance and participation, the place and use of organized play and music in community programs.

(2) The Rural Youth Conference, designed primarily for members and leaders of Minnesota's rural youth groups. Variety and distinctiveness

will characterize the topics to be offered, the aim being to present subjects of unusual interest and value and at the same time to give the young people a type of program not ordinarily available in their home communities.

(3) The 4-H Club Leaders' Conference, offered under the direction of the 4-H Club Department, gives opportunity to the 4-H leaders to take part in discussion of their problems. The purpose of 4-H demonstrations and various problems involved in staging and coaching them will receive major emphasis. Four-H records in connection with county and state events in junior leadership work, etc., will also be featured. Music, dramatics, and other live topics will be included.

Announcement folders will be available on request early in December preceding the Farm and Home Week.

ADVANCED CREAMERY OPERATORS

November 8-11, 1938

Division of Dairy Husbandry

The Advanced Creamery Operators' Short Course, a symposium for butter manufacturers, is intended for persons primarily interested in the butter industry or in certain phases of it. The course will consist of a review of recent investigations and problems which are of vital interest to the industry. Several prominent practical and technical men will appear on the program, together with the members of the dairy division staff. Fee: \$5.00.

BOYS' AND GIRLS' FOUR-H CLUB WEEK

June—First or Second Week

Division of Agricultural Extension

This event will run four days and is intended for two special groups in 4-H work. The first includes several hundred 4-H club members who have made outstanding records in their project work and because of this are selected to represent their club and county in this state event. The second group includes delegates from many of the 4-H clubs in the state wishing to be represented. The second group includes the county club agent

and both adult and junior local leaders. Because of limited housing facilities, the attendance from each county is limited to fifty.

The purpose of Four-H Club Week is to bring together a large number of 4-H club members, representing every county in the state, and to give them a brief course in project work and the general 4-H activities, as well as to provide them an interesting and inspirational time. For the leaders who attend, the purpose is to give a brief course in leadership training.



Recreation Time at State 4-H Club Week

CATTLE FEEDERS' DAY

June—Date to be announced

Division of Animal Husbandry

This one-day program consists primarily of reports of experimental results in feeding and breeding and is intended to give cattle producers and feeders first-hand information on subjects that are important to the cattle industry. No fee.

CREAMERY OPERATORS

January 4 to February 28, 1939

Division of Dairy Husbandry

The Creamery Operators' Short Course, established in 1893, was the first short course to be offered by the University of Minnesota. To date more than 4,000 students have attended the course. It has unquestionably had a marked influence on the creamery industry throughout the state.

The course is designed for those who are seeking fundamental knowledge pertaining to milk

and the manufacture of butter. Those who attend the course must have had not less than two years of high school training and one year of practical experience in a dairy plant. Admittance to the course is by application only and will be limited to 45 students.

Those who attend will be required to take the following subjects: dairy chemistry, dairy bacteriology, dairy arithmetic, creamery accounting, buttermaking, business English, poultry management, dairy cattle feeding, and testing milk and milk products. During the eight weeks, a number of prominent speakers will address the class on current problems of the industry.

A tuition fee of \$15 is charged. In addition, there will be a hospital fee of \$1. The cost of books, white clothing, etc., will be about \$15. For those who lack the formal educational requirement for entrance, a special entrance examination will be arranged.

DAIRY FARMERS' DAY

June 2, 1939

Division of Dairy Husbandry

This is a day set aside for dairy farmers to visit University Farm and to take part in a program of subjects of special interest to dairy producers. Experiments in progress in the Dairy Division are explained. Cow-testing results are summarized and awards presented, along with reports on progress of bull records and other phases of organized herd improvement work. Practical talks and demonstrations relating to dairy feeding, breeding, and management are presented. No fee.

EDITORS' SHORT COURSE

May—Date to be announced

Office of Publications and Department of Journalism

This course is aimed directly at the needs of persons engaged in various phases of rural weekly newspaper publishing. News reporting and editing, advertising and circulation problems, and general business and editorial policies are dealt with in talks, demonstrations, and other program features. Special cooperation is extended to the University in the conduct of this course by the Min-

nesota Editorial Association, the University Printing Department, and The Minneapolis Journal. Open to everyone interested. No fee.

FARM STRUCTURES CONFERENCE

March 3, 1939

Division of Agricultural Engineering

In addition to a fine program of talks on subjects of vital importance to builders, the Farm Structures Conference offers a display of materials and visits to the agricultural engineering shops and to the cooperative tile-testing laboratory. There is also a chance to secure information on topics on which reliable data are otherwise difficult to get. Farmers, builders, and dealers are invited. No fee is charged.

GREENSKEEPERS

March—Dates to be announced

Division of Soils

This is a course of from 3 to 5 days formulated to deal with problems in the care and maintenance of golf courses, lawns, and parks. Basic instruction fundamental to the understanding of such problems is presented along with practical interpretation. Fee: \$3.

HORTICULTURE

March 29-31, 1939

Division of Horticulture

The popularity and usefulness of this course is shown by the fact that it has been given for nearly



Demonstration of Horticultural Practice

20 years, with an attendance of from 300 to 400 persons each year.

It is divided into sections to meet the needs of vegetable growers, fruit growers, commercial flower growers and propagators, and amateur gardeners. Authoritative speakers, selected from the staff at University Farm, and practical growers bring up-to-the-minute reliable information on horticultural problems to those attending. Two or three guest speakers from outside the state complete the list of instructors. No fee.

HYBRID CORN GROWERS

December 12-13, 1938

Division of Agronomy and Plant Genetics

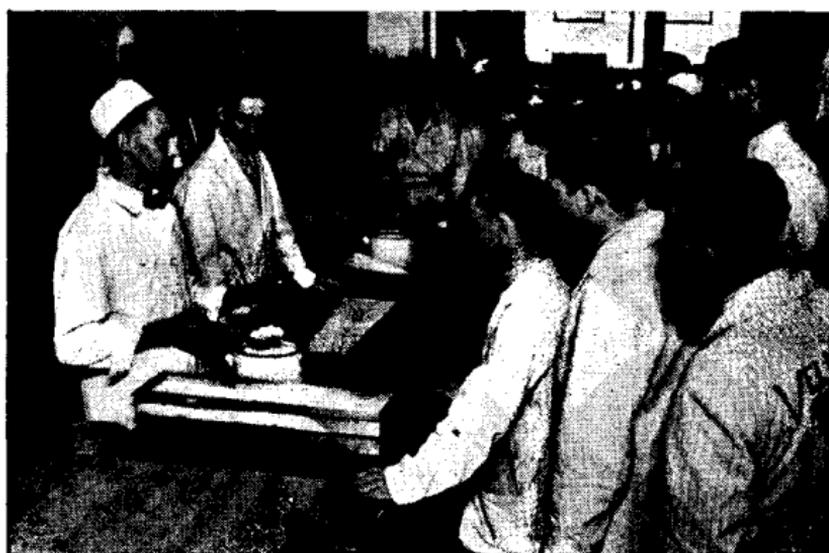
This short course is given at the request of growers of hybrid seed corn and is intended to present information in regard to the various steps in breeding, introduction, production, and distribution. More specifically, this will include methods of breeding inbred lines and the determination of their value in hybrids; the value of fertilizers and seed treatment with special reference to the seed grower; drying, grading, and storing seed, and other special problems of interest to the hybrid seed corn producer. Fee: \$3.

ICE CREAM MANUFACTURERS

March 21-24, 1939

Division of Dairy Husbandry

The Ice Cream Short Course will interest men in various fields of the dairy industry. Those who



Demonstration in Making Fancy Ice Cream

are manufacturing ice cream on a large or small scale will find the material presented in this course of vital importance to their business. Likewise those who are interested in the manufacture and distribution of creamery equipment will find this course of particular interest. The general subject matter which will be covered will include pasteurization of ice cream mix, freezing of the ice cream mix, sanitary problems confronting the ice cream manufacturer, ingredients used in the ice cream mix, food value of ice cream, and defects in ice cream. In addition to the above, demonstrations will be presented on the making of fancy ice creams, tinting, and decorating. Fee: \$5.



Short Course Class in Poultry

POULTRY SHORT COURSE FOR FLOCK-SELECTING AGENTS

August 25, 26, 27, 1938

Division of Animal and Poultry Husbandry

This course, offered in cooperation with the Minnesota Poultry Improvement Board and the U. S. Department of Agriculture, is intended primarily to provide the special training needed by persons acting as flock-selecting agents and inspectors for hatcheries operating under the state and national poultry improvement plan. Instruction will emphasize culling for production and standard quality, but will also include subjects such as feeding, housing, and general management of poultry flocks. No fee.

REFRIGERATED LOCKERS

September 19, 20, 21, 1938

Divisions of Home Economics, Horticulture, Animal Husbandry, Agricultural Economics, and Veterinary Medicine

Intended primarily for cold storage locker operators and managers and established at their request, this course will offer authoritative information on the costs, possibilities and limitations, and management problems related to the cold storage meat locker industry, freezing of home garden products, preservation of fruits by freezing, use of frozen foods in the home, preparation of foods for the locker, hygiene and sanitation of meat locker establishments, as well as slaughtering and meat cutting demonstration. Fee: \$3.

RURAL DRAMATICS

March—Dates to be Announced

Division of Agricultural Extension

Attendance at the leadership training course in rural dramatics is limited to two adult representatives, preferably farm men and women, from each county interested in improving the use of one-act plays as a community recreational possibility. These representatives must be willing to conduct one or more training meetings back in their own counties.

Through the training of leadership in the selection, direction, and staging of one-act plays, the course aims to improve the opportunities for rural people to provide recreation and entertainment in their own communities and to develop a better foundation for the part amateur dramatics may play in rural community activities. The program includes three days of discussion and laboratory dealing with the problems and technique of play production. Fee: \$1.

SWINE FEEDERS' DAY

October—Date to be announced

Division of Animal Husbandry

The purpose of this meeting is to bring the swine growers of the state together at University Farm for a day so that they may get first hand the results of breeding and feeding experiments,

hear and participate in discussions on subjects of importance to the swine industry, and at the same time enjoy a day of recreation. Everyone interested is invited to attend. No fee.

UNIVERSITY OF SCOUTING

July 23-29, 1939 (tentative)

Boy Scouts of America—Region Ten

The University of Minnesota and Region Ten of the Boy Scouts of America offer this opportunity to Scout councils to train men in Scout leadership methods under expert instructors, ideal conditions, and beautiful surroundings. The courses are designed to train men to be administrators, officers, and instructors in local council training courses.

All registered scouters are eligible to enroll for courses at the University of Scouting, including council presidents, executive board members, district chairmen, district committee members, chairmen and members of council and district leadership training committees, and all others who will serve in some capacity to help train other men through their local council training program.



Action Scene from Scouting Course

The minimum age limit is 21 years. The University of Minnesota short course fee is \$5; board, \$8; and incidentals, \$2; total cost, \$15 for the entire period, including meals and all necessary notebooks, textbooks, and printed material. Courses offered include elements of scoutmastership; health and safety and first aid; principles of

scout and cub leadership; scoutcrafts specialization courses such as archery, wood carving, and leathercraft; University specialization courses such as forestry, plant and insect life, soil management, and conservation.

VETERINARY

June or July—Date to be announced

Division of Veterinary Medicine

The Veterinary Short Course is given in cooperation with the semi-annual meeting of the Minnesota State Veterinary Medical Society and is intended for graduate licensed practitioners.



Veterinary Short Course Clinic

Its purpose is to instruct veterinarians in the latest developments in the field in order that they may render a more efficient service to the animal industry. Subject matter to be covered will include phases of medicine and surgery and control of infectious diseases in horses, cattle, sheep, swine, and poultry. No fee.

NORTH CENTRAL SCHOOL AND STATION

Grand Rapids, Minnesota

Superintendent R. L. Donovan

4-H CLUB SHORT COURSE

June—Date to be announced

Attended annually by 300 to 350 4-H club members from northeastern Minnesota, the 4-H Club Short Course program includes class work,

contests, and recreation. Boys are given instruction in dairy judging, cattle feeding, poultry culling, chick management, rope work, crops, gardening, home beautification, and other subjects. Included in the girls' program are classes in clothing, canning, and home furnishing. The regional contests in one-act plays and music are held at this time.

NORTHEAST EXPERIMENT STATION

Duluth, Minnesota

Superintendent Mark J. Thompson

ARROWHEAD INSTITUTE AND NORTHEAST MINNESOTA FARMERS' WEEK

April 5-8 (Dates tentative)

Aimed to meet the needs of all people in northeastern Minnesota, the Farmers' Week program is arranged to bring them together for a regional conference at the beginning of the growing season. Instructional and social values are stressed and a well-rounded program of class instruction in all phases of agriculture and homemaking, including judging contests, demonstrations, and exhibits, is scheduled. Many Arrowhead farm groups hold meetings at this time. In addition, evening sessions feature plays, music, and other entertainment.

SUMMER CROPS DAY

August 19 (Date tentative)

This day, designed to follow seasonal progress on the growing condition of crops, comes just before the Fair season starts. This date is somewhat late for hay and only fair for grain, but is excellent for the fruit and tilled crops which are very important to this area.

NORTHWEST SCHOOL AND STATION

Crookston, Minnesota

Superintendent T. M. McCall

4-H-CLUB WEEK

June—Date to be announced

Four-H Club Week is a course for club members and leaders in northwestern Minnesota. Instruction and specific information on club projects

is presented by specialists to give club members a broader understanding of the organization's project work and activities. Regional contests are held and a well-balanced recreational program offered.

WOMEN'S CAMP

June—Date to be announced

This course, intended for homemakers, is offered annually. It brings the latest and best information available on various phases of home-making, such as foods and clothing, and includes a variety of topics on handicrafts and community service.

RED RIVER VALLEY SHOWS AND NORTHWEST SCHOOL FARMERS' WEEK

February 6-10

With all farmers and homemakers invited to attend, this biggest of all events at the Northwest Station brings up-to-the-minute information on agriculture and home economics. Specialists in various educational lines are featured on the 4-day program. Annual meetings of Red River Valley farm organizations are scheduled, and every evening an entertaining assembly is featured. There are judging contests and a complete livestock and crops show with a full list of premiums. That this week is popular among the northwestern Minnesota farmers and homemakers is evidenced by the 8 to 10 thousand who annually attend.

WEST CENTRAL SCHOOL AND STATION

Morris, Minnesota

Superintendent Theodore H. Fenske

4-H CLUB WEEK

June 19-21 (Dates tentative)

This annual 4-H event is open to club members and leaders in west central Minnesota who are approved by their county agricultural agents. It is the aim of the course to give 4-H boys and girls an opportunity to obtain latest information regarding their project work, to provide training in leadership, and to give them an opportunity to meet members from other counties in recreational events.

HOMEMAKERS' SHORT COURSE

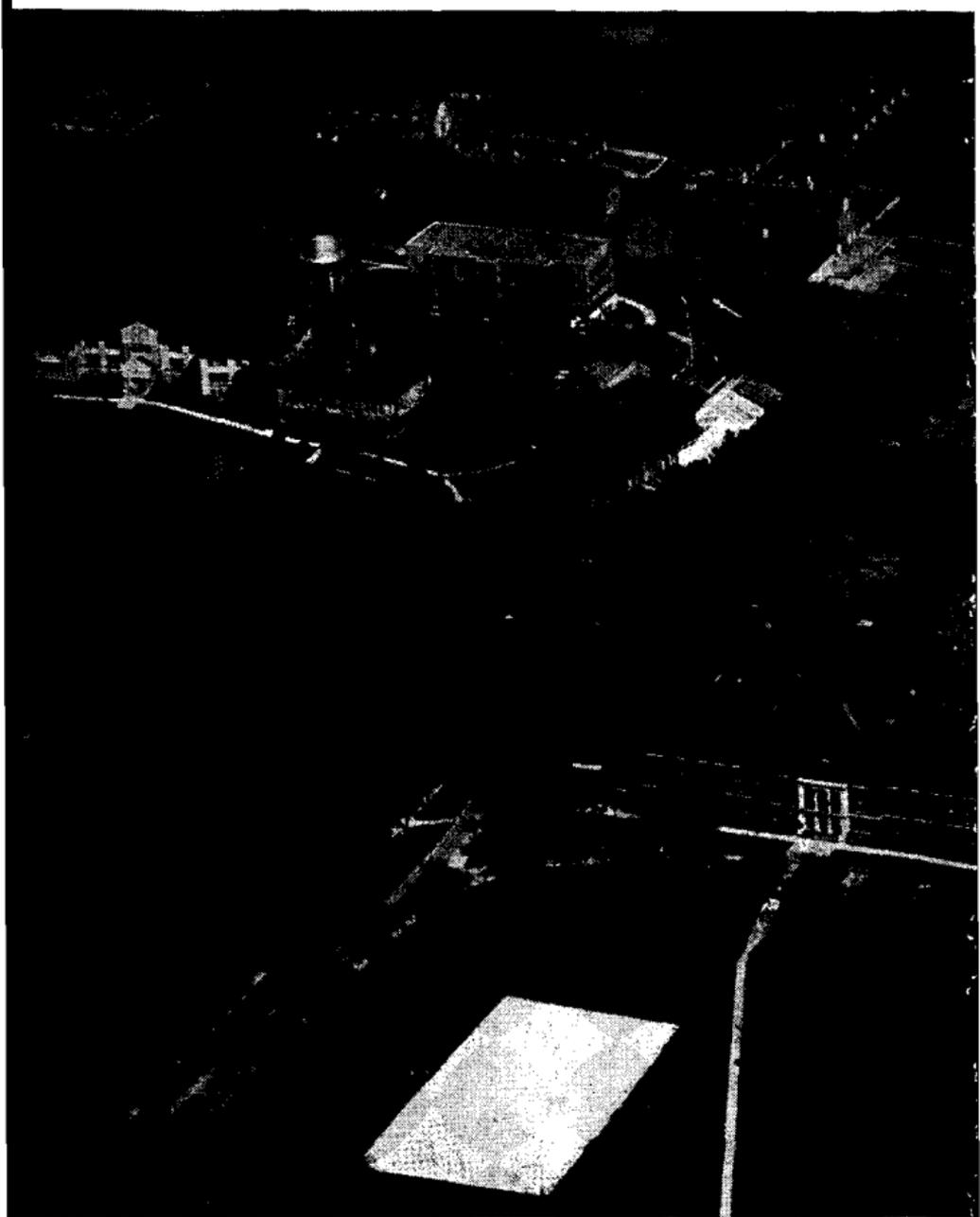
June 14-16 (Dates tentative)

The homemakers from the farms, villages, and cities of west central Minnesota are invited to attend this 3-day short course. It is given to provide homemakers with the latest ideas in home care and management and at the same time gives them an opportunity for rest and recreation.

STATION AND VISITORS' DAY

July 12 (Date tentative)

This day is set aside for visitors to see results of crops, soils, and livestock experiments being carried on at the West Central School and Station. Farmers, farmers' wives, county agents, high school agriculture teachers, and all others interested in agriculture are invited to the Station for the day. Speakers of general interest are scheduled.



The BULLETIN
of the University of Minnesota



Extension Classes

1938-1939

**MINNEAPOLIS
ST. PAUL
THE CAMPUS**

General Extension Division



FIRST SEMESTER
September 26 to February 4

SECOND SEMESTER
February 6 to June 3

VOL. XII

NO. 42

JULY 27 1938

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

CALENDAR

1939		
September	12 Monday	Registration, first semester, begins
September	26 Monday	Classes begin
October	1 Saturday	Last day for registration with out exam fee
November	21 Monday	Mid-semester examinations begin
December	17 Saturday	Christmas recess begins
1939		
January	3 Tuesday	Classes resumed
January	23 Monday	Registration, second semester, begins
January 30 to February 3		Examinations, first semester
February	4 Saturday	First semester closes
February	6 Monday	Second semester classes begin
February	13 Saturday	Last day for registration with our exchange
April	3 Monday	Mid-semester examinations
May 29 to June 2		Examinations, second semester
June	3 Saturday	Second semester closes
June	11 Sunday	Graduation services
June	17 Saturday	Sixty-seventh annual commencement

WHERE TO REGISTER

- Minneapolis:** 702 Administration Building, University of Minnesota, (Campus) Main 5177, Walter R. Fitch, Director
- Minneapolis:** 620 Northwestern Bank Building, (Downtown) Marquette Ave. and Sixth St. South, Main 0827, A. H. Gray, Assistant Manager
- St. Paul:** 500 Robert St., Extension, Cedar 6175, C. H. Dow, Resident Manager
- Duluth:** 504 Arwood Building, Main 7900, John L. Harlow, Resident Manager

The Administration Building of the University campus may be reached by going west block on Cass to Grand from the Washington Avenue car line, or three blocks on Fifth Avenue S.E. from the Oak-Harriet car line.

OFFICE HOURS

From September 18 to October 1, and from January 30 to February 11 (registration periods), 9:30 a.m. to 1:30 p.m., including Saturdays.

At other times, 9:30 a.m. to 1:00 p.m., Saturdays to 12:00 noon.

From September 12 to March 1 the campus offices are open from 9:30 a.m. to 4:30 p.m., except on Saturdays.

REGISTRATION TIME

All registrations should be made well in advance before the first week of each semester. Registration ends later than Saturday, October 1, for the first semester, and February 14, for the second semester, but applications for registration are accepted until the last day of the semester.

ANNOUNCEMENT AND PROGRAM of EXTENSION CLASSES

Minneapolis, Downtown

St. Paul, Downtown

On the Campus

UNIVERSITY OF MINNESOTA
1938-1939

First Semester
September 26 to February 4

Second Semester
February 6 to June 3

THIS BOOK CONTAINS all information regarding extension classes, as well as the program for the current year. Classes are grouped in four units, as follows:

S.L.A. Classes, page 15
Education Classes, page 42

Business Classes, page 50
Engineering Classes, page 61

FOREWORD

On June 30, 1938, the General Extension Division completed its twenty-fifth year of existence as a unit of the University organization. It now looks forward to another quarter century of greater and perhaps more effective educational service to the people who support it. This bulletin is devoted to only one feature of that service—namely Extension Classes. These classes are for the most part concerned with the regular college or university subjects, but they are available at the times most convenient for those who are employed or otherwise engaged during the regular daylight hours.

It goes without saying that the offerings contained in this bulletin are meant to engage the attention of those who seek to make the most of their natural gifts and aptitudes. The desire to excel, the impulse to grow both physically and mentally, is present more or less in almost every human being. The classes and subjects listed herein offer the opportunity (but only the opportunity) for the cultivation of intellectual growth in a congenial atmosphere and under competent leadership. To opportunity the student himself must add the ingredients of determination and persistence. A rich and full life is usually the result of the expansion of native powers.

Again this year it is understood that all classes scheduled will be conducted, even tho some may fall short of the required minimum enrolment.

Richard R. Prie

Director

KEEP THIS BULLETIN FOR FUTURE REFERENCE

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HOW TO STUDY

THE INSTITUTE

The General Extension Division takes pleasure in inviting registered students, and those who are about to register, to attend an institute on how best to use time and energy in an economical process of study. The institute is offered in the belief that practically all students, no matter how experienced, may find here and there suggestions that will help them be more efficient in their study habits.

Kenneth H. Baker, Assistant Professor of Psychology, will be in charge of the institute. He is well known for his teaching of the regular extension class in "How To Study," and of the same course in day classes. Meetings will be two hours in length, the first half for lectures by Professor Baker, to be followed by discussion calculated to clarify ideas presented. The lectures which Professor Baker has selected to give are outlined as follows:

1. *ADULT LEARNING.* A brief survey of the work that has been done on the relation between age and learning. Importance of adequate motivation. Vocational and educational objectives.

2. *BASIC SKILLS.* A discussion of the importance of certain basic skills in academic success. Writing. Reading. Concentration. Some suggestions as to how these skills may be developed.

3. *LECTURE NOTES AND EXAMINATIONS.* How lecture notes should be taken, what they are for. Precautions to be followed in taking old and new type examinations.

4. *TEXTBOOK ASSIGNMENTS.* Outlines. Self-recitation methods applied to various types of courses.

5. *DISTRIBUTION OF STUDY.* Importance of review. Planning of study periods.

THE TIME TABLE

Place: Burton Hall Auditorium, University Campus

Evenings: Monday to Friday

Hour: 7:00 to 9:00 p.m.

Dates: FIRST SEMESTER

SECOND SEMESTER

September 19 to 23

January 30 to February 3

**THERE IS NO CHARGE FOR THE INSTITUTE
ALL WILL BE WELCOME**

PROGRAM INFORMATION

Extension classes are ordinarily offered on the basis of a demand already established, and of the distribution of that demand over a series of years. Some classes are offered every year, a few every semester; other classes may have a limited demand and cannot be offered so frequently. Those described and programmed in this bulletin are those for which it is anticipated there will be a sufficient demand to justify them.

Size of Classes.—Every class offered in this bulletin will be given regardless of the number of registrants for it. The minimum size of classes usually required will not be effective for the current year. Classes having an excessive registration may be divided, if that will tend to improve the quality of instruction, and students will be expected to attend the section to which they are assigned.

Instructors.—The assignment of instructors announced in this bulletin is made in good faith and it is expected that the assignments will be met. In case a change of instructor is for any reason necessary it is expected that students will have registered because they wanted the subject taught, and the change in instructor will not be valid reason for dropping the class.

Classes on Demand.—Extension classes will be conducted in any available subject on petition of a sufficient number of students. The exact number will depend on the subject and the conditions of offering, and will be determined on application. Such a petition may be made to any office of the Division, and should be accompanied by self-addressed envelopes for each petitioner, in which notice may be given of the status of the class. When a class is organized in this manner fees may be paid without the late registration fee any time during the week of the first class meeting, but no refund of fees will be made for cancellation.

Class Schedule.—The majority of classes meet once a week for two (academic) hours for a period of seventeen weeks, the last of which is devoted to the examination, and carry three credits. This may be considered the standard class. Exceptions, such as classes meeting for a longer period, or those in laboratory sciences meeting twice a week and carrying more credit, are noted in the description and program of the class.

Five-credit classes in beginning languages, history, mathematics, and some other subjects are announced to some extent in this program. Such classes meet for an actual time of two hours and forty-five minutes, which, with an allowance for a recess, makes a session of approximately three hours.

Wherever possible classes are scheduled either at 6:20 p.m., closing at 8:00, or at 8:05 p.m., closing at 9:45. This enables a student to attend two classes in one evening. Classes meeting for more than two hours cannot conform to this schedule. The time of meeting for each class is stated in the program.

Holidays.—Extension classes meet regularly for the entire semester without regard to holidays, except for the Christmas recess. For this recess, classes will be suspended Saturday, December 17, and will resume on Tuesday, January 3. Classes whose meetings fall on any holiday may, by agreement between students and instructors, be dismissed, but such meetings must be made up by extra meetings before the close of the semester in which they occur.

Places of Meeting.—Classes meet in designated buildings on the University campus, Minneapolis, or in places chosen for convenience in downtown Minneapolis and St. Paul. The location of these places is printed on the outside back cover of this bulletin.

Class Indications.—The number prefixed to the title of a class, as well as the title itself, is usually the same as that used for the corresponding class in the bulletin of the college where it originates. The letters *ex* affixed to a number indicate either that the

class has no corresponding class offered in day classes, or that it is a material modification for extension purposes of a corresponding day class; it does not indicate necessarily that a class does not carry credit toward a degree.

Classes marked with a † are what are known as continuation classes requiring the completion of two, or sometimes three, classes before credit is given for either.

The time and place of meeting of classes is indicated by abbreviations, which in most cases, will be obvious. The days of the week are indicated by the first letters, and the buildings in St. Paul and Minneapolis by the titles or abbreviations of them. For example, "T 6:20 St.P.Pub.Lib.Aud." means that the class will meet on Tuesday at 6:20 in the auditorium of the St. Paul Public Library. In some cases a number precedes the letter indicating the day of the week. This refers to the number of the class offered so that there may be no confusion as to which class is offered in either semester.

English Placement Tests.—All students beginning the work in English composition are, by general university regulation, required to take the placement tests prescribed by the Department of English. These tests will be given according to the following schedule:

First Semester:

7:30 Thursday September	22	Room 110, Folwell Hall, Campus
7:30 Thursday September	29	Room 110, Folwell Hall, Campus
7:30 Thursday September	22	St. Paul, Extension Center 200

Second Semester:

7:30 Thursday February	2	Room 110, Folwell Hall, Campus
7:30 Thursday February	9	Room 110, Folwell Hall, Campus
7:30 Thursday February	2	St. Paul, Extension Center 200

GENERAL INFORMATION

ADMISSION TO EXTENSION CLASSES

Because of the broad and general purpose for which they are organized, extension classes are open to all persons who can profitably pursue them. The only requirements, therefore, are sufficient maturity and ability to study successfully the work undertaken.

N.B.—The only exception to this is in the case of classes in the College of Science, Literature, and the Arts numbered 100 or above, where every registrant must have completed the prerequisites.

Those wishing to count extension class study toward any university degree must satisfy requirements for admission to the University as well as specific requirements for the degree concerned. These requirements are explained in paragraphs below (see page 7). Those who do not desire this credit need not meet any university entrance requirements, and may freely choose among the classes offered in terms of their needs and desires, ordinarily without regard to prerequisites.

Regularly Matriculated University Students.—No student regularly registered for the day class work of any unit of the University of Minnesota may register concurrently for an extension class without the approval of the dean of his college. Such approval is not usually granted when the extension class would increase the student's work beyond the normal load.

Dropped Students.—A student who has been dropped by any unit of the University may not register for extension classes until such time as he has been accepted for readmission to his unit.

EXTENSION CERTIFICATES

For the completion of specified amounts of work, in definite fields, the General Extension Division awards certificates. The basis for these awards is the completion of 90 credits, of which at least 25 must have been earned at the University of Minnesota. Credits earned in other accredited institutions, as well as in the various colleges of the University of Minnesota, will be accepted to the extent that they meet certificate requirements. Credits earned by correspondence study, in the University of Minnesota or any institutions accredited to it, will be accepted for not more than 45 of the 90 credits required. For detailed requirements, see Science, Literature, and the Arts Classes, page 15; Business Classes, page 50; and Engineering Classes, page 61.

CREDITS

A large proportion of all extension classes carry credit that may be applied toward a university degree whenever a student becomes properly registered in one of the colleges of the University, and has met the prerequisites for the courses involved. Students may accumulate credits toward a degree in advance of registration in a particular college, but are advised to secure the acceptance of their credentials for admission as early as possible.

In response to particular demands some classes are offered that are outside the field of regular university instruction. They may, however, carry credit toward an appropriate General Extension Division certificate. (Exception must be made of the Junior College certificate since that is part of the work for a degree and may include only courses which carry degree credit.) Such courses are indicated in the program of classes. A few sub-collegiate classes are offered carrying no credit whatever.

Every student who successfully completes the work of an extension class, including the final examination, receives the credit stated in the announcement of the class. This credit is permanently recorded in the office of the university registrar and remains as extension credit until such time as the student may qualify for its transfer to some other college of the University.

It is assumed that every student registers on this credit basis, plans to do the work of the class, to take the final examination, and to receive a grade. This is probably good educational procedure, assuring the best results for the student.

Auditors.—Students who do not desire, or are unable, to do the entire work of a class may be accepted as auditors, upon petition for this privilege upon blanks provided. Those in this status will not be expected to participate in class work, nor take the final examination, and may never receive credit for the work. A registration may be changed to the status of auditor at any time during progress of a class up to the time for the final examination. Auditors pay the same fees as other students.

N.B.—Registration blanks make no provision for registration as an auditor. The filing of one of the above blanks is necessary to procure this status.

An auditor may change to the credit status not later than the eighth week of a semester. Apply to any extension office.

Amount of Credit.—Classes meeting for two hours once a week for a semester normally carry 3 quarter credits. (Altho extension classes are on a semester basis, credits are computed in quarter hours in accordance with the regular university usage.) Classes meeting oftener than once a week, or for more or less than the two-hour period carry appropriate credit based upon their relation to the normal three-credit class. Such variations are indicated in connection with each class concerned.

Prerequisites for Credit.—For the benefit of students who expect to use their credits toward a degree each class announcement contains a statement of prerequisites. These consist of other classes that should precede the class to which they refer. Extension

students may ordinarily disregard these prerequisites; there are only a few cases where they must be observed. The only requirement for such students is that they be sufficiently mature and competent to do the work of the class for which they register. Of this the instructor will be the judge; and only when the lack of previous classes results in inability to do the work of a class will a student be excluded.

Candidates for a degree may even enter classes without prerequisites, provided they are otherwise competent, but they must ultimately meet the prerequisites in some way before the credit can be used toward a degree.

Residence Credit.—By action of the University Senate, attendance in extension classes in Minneapolis, St. Paul, and Duluth is interpreted as meeting the requirements of residence at the University; that is, such attendance may be counted in fulfilling the requirement of time spent in residence study, as prescribed for various degrees by the University or by the separate colleges. (This interpretation does not apply to extension classes outside the three cities named, nor to correspondence study.)

CREDIT TOWARD A UNIVERSITY DEGREE

Students who wish to become candidates for a degree must meet the requirements for admission into the school or college granting the degree, and the requirements regarding the conversion of extension credits into credits toward a degree. Admission to the University is either by certificate or by examination, as defined below.

Admission by Certificate.—The applicant must present a certificate of graduation from an accredited preparatory school, or certificates showing that he has passed examinations given by the College Entrance Board, or by the regents of the University of the State of New York, or by a state board of education in a state where such examinations are recognized by the state university in that state, or examinations in preparatory courses offered by correspondence study by the University of Minnesota. Such certificates are to be filed for evaluation by the University Board of Admissions. (For specific subjects of units of each required, see the Bulletin of General Information of the University.)

Admission by Examination.—Applicants for admission to the University (this does not apply to admission to extension classes; see above under Admission to Extension Classes) who are high school graduates, or who are at least nineteen years of age, and are unable to meet the requirements for entrance by certificate will be admitted provisionally, and subject to one year of satisfactory work at the University, upon completing successfully the following tests:

- a. College aptitude test
- b. Test of proficiency in English
- c. Such special placement tests as the school or college to which the candidates desires admission may prescribe.

Conversion of Extension Credit into University Credit.—Extension credit will become credit toward a university degree when the student has formally presented himself to the proper official of the college of his choice and has been accepted as having completed the required work for entrance into an accepted curriculum at the time of his application. In the College of Science, Literature, and the Arts application will be made to the assistant dean for the Senior College, following the completion of the two years' work of the Junior College. In the School of Business Administration and the College of Education, application will be made to the Students' Work Committee of the college concerned. In the Institute of Technology the application will be made to the chairman of the Advanced Standing Committee of the particular unit to be entered—the College of Engineering and Architecture, the School of Chemistry, or the School of Mines and Metallurgy.

N.B.—Students accepted for a degree in the above manner should have each semester's registration for extension classes approved by an official of their college.

It is possible, as an increasingly large number of students are realizing, to complete a considerable portion of the requirements for a Bachelor's degree in extension classes. Theoretically all the work for a degree, including the curricular requirements and special demands, such as comprehensive final examinations, can be met through these classes. In practice, however, there are likely to be advanced course requirements in major subjects which cannot be covered by extension classes because of insufficient demand. In order that the student may make a practical program which will enable him to get the greatest benefit from his extension classes and reduce to a minimum the time that is spent in securing advanced courses in day classes, it is necessary that advice and assistance should be sought at the earliest possible moment.

Advanced Standing.—This University accepts credits earned at all reputable colleges and universities, state teachers colleges, and junior colleges if they are accredited to the University. Such credits are accepted as far as they represent courses equivalent to those offered in this University. They must be certified upon the official blank of the institution granting them and give specific information regarding the subject and its descriptive title, time spent, number of credits, the grade, the preparatory units presented for entrance, and a statement of honorable dismissal.

Work done at nonaccredited institutions will be accepted for advanced standing only upon satisfactory completion of a comprehensive examination for each course presented, and in limited amount. If such examinations are taken within six weeks after formal matriculation they are given without charge. Students desiring advanced standing should consult the Students' Work Committee through which arrangements will be made either for the evaluation of credentials or for special examinations.

Filing of Credentials.—Students who have previous records in other institutions are urged to file their credentials for admission with advanced standing as early as possible. This makes possible the determination of the student's present status and the giving of specific advice as to the work which should be taken.

Graduate Credit.—Under the regulations of the Graduate School credits earned in extension classes may not regularly be counted toward a graduate degree.

REGISTRATION

1. **Registration Dates.**—First semester, September 12 to October 1; second semester, January 23 to February 11. Registrations will be accepted after these dates, on terms stated below, paragraph 6.

2. Registration may be either by mail, or by personal application. Those desiring to register by mail should make application (by mail, telephone, or in person) to the campus office of the General Extension Division for registration blanks, program of classes, and other necessary material. These will be promptly supplied so that students may not be delayed in making necessary study of classes offered and in filing registration.

3. The registration blank, consisting of several sections, no one of which should be detached, must be filled out completely according to instructions printed thereon.

4. Registration accompanied by the payment for fees may be mailed to the main office of the General Extension Division, 402 Administration Building, University of Minnesota, Minneapolis. The receipted fee statement, constituting formal acceptance of the registration, will be returned by mail. Registrations with fee payments will be accepted if delivered in person to any of the offices of the General Extension Division.

5. Those desiring to register in person will apply at any one of the offices during their office hours, as listed on inside cover. Students registering for the first time are advised to register in person in order that they may be assisted or advised by those in attendance. A member of the Students' Work Committee is in attendance during the office hours at the main office, and resident managers in other offices endeavor to be available for most of the registration period.

6. Late Registration.—Students should register before the first meeting of their classes, but they are permitted to register up to and including Saturday of the third week of either semester. For this privilege a late registration fee is charged. For registrations made from Monday, October 3 to Saturday, October 8, for the first semester, and from Monday, February 13, to Saturday, February 18, for the second semester, the fee is one dollar (\$1). Dates are inclusive. Following these periods the fee is two dollars (\$2). The fee applies to each class for which registration is made.

N.B.—Registration sent by mail and postmarked later than midnight of October 1 for the first semester, and February 11, second semester, will be subject to the late registration fee and will be held up until the fee is paid.

Students desiring to register later than the third week of a semester must secure the approval of the Students' Work Committee. Registrations made later than the end of the fourth week carry no credit.

7. Completion of Registration.—A registration is completed when payment of fees is received; the receipted fee statement mailed to the student is his evidence of completion. Class cards are mailed to the instructor and become his evidence of the completion of the student's registration. The failure of an instructor to receive a class card usually indicates that the registration has failed of completion; the student should make sure of his responsibility in the matter. Matters of irregularity may be referred to the Students' Work Committee. No credit for a class will be granted unless registration is complete.

8. Change of Registration.—Students who desire to transfer from one class to another may do so by making application to the main office of the General Extension Division. There is no fee for transfers. After the third week of the semester such a change requires the approval of the instructor to whose class the change is made. If the change is made after the eighth week of the semester no credit can be allowed for either class involved. Failure to observe this regulation, so that proper record of transfer may be made, may result in loss of credit.

9. Cancellation.—Students who cease to attend a class should have their registration officially cancelled by application to the main office of the General Extension Division. Failure to do this leaves an incomplete record which has the possibility of becoming an embarrassment.

10. Advice on Registration.—The Students' Work Committee of the General Extension Division is ready to advise students regarding a number of matters. Students registering for the first time may learn what classes are most appropriate for them, in view of their preparation. Those planning to earn a certificate, or a degree, may save themselves mistakes in choosing classes which do not count in their courses. Those who have accumulated a number of credits may be advised as to what certificate or degree they should work for, and what classes to choose. Credits may be submitted for evaluation and the determination of advanced standing. Consultations may be had any time either by telephone or by personal interview. Students who wish to make most effective use of their study should not neglect to check their work with the committee.

All candidates for degrees will be directed to the proper official in the college involved, from whom authoritative advice regarding the degree and the appropriate curriculum may be had.

FEES

The usual fee for an extension class meeting once a week, for two hours, and continuing for one semester, carrying 3 credits, is \$10. Wherever the fee is more or less than this standard the amount is stated in the announcement of the class. For classes meeting for two hours and forty-five minutes, and carrying 5 credits, the fee is \$17. Classes in chemistry and other sciences have fees varying with the amount of laboratory involved. These are tuition fees, do not include texts or materials, and are the same for auditors as for regular students.

Laboratory Fees.—These charges for materials or service are made in connection with certain classes where necessary. In most cases they are payable with the tuition, but in classes in chemistry at the Chemistry Department.

Material Fees.—In some classes material is furnished, usually in place of textbooks, and a minimum charge is made, payable at time of registration. All classes involving extra fees are indicated in their description (announcement).

Late Registration.—For the privilege of registration after the regular time a fee is charged, on a schedule set up in paragraph 6, under Registration.

Registration is not complete until fees have been paid. Checks should be for the exact amount due, and made payable to the University of Minnesota.

Special Fees for Examinations.—For the removal of a grade of Condition, examinations are given, for which the fee is \$1. This should be paid before the examination; the grade cannot be recorded until the fee is paid. For special examinations for credit for work done elsewhere a fee of \$5 is charged, except under conditions specified on page 8 (Advanced Standing).

Refunds.—Students who cancel their registration before the ninth week of a semester may obtain a pro-rata refund of the tuition fee according to a scale established by the Board of Regents, provided written notice is given any office of the General Extension Division at the time of cancellation.

No refund will be made for cancellation from a class which is carried for less than the minimum number of students.

N.B.—Applications for refund because of cancellation must be made no later than December 3, for the first semester, or April 15, for the second semester. They will not be considered if made later.

Two dollars (\$2) of each fee is nonrefundable, being withheld to cover registration expense. Remittance of refunds by mail requires a period of time, but immediate refunds may be had by making application in person between 9:00 a.m. and 12:00 m. or 1:00 and 3:00 p.m., at the campus office of the General Extension Division.

N.B.—Refunds to students who have purchased Student Season Athletic books are subject to special provisions. For details see page 14.

EXTENSION STUDENT LOAN FUND

The General Extension Division has at its disposal a fund from which it can make loans for tuition to needy and worthy students. Prospective students who find it difficult or impossible to pay tuition fees should make application to the director for assistance. Loans are open to students who have satisfactorily completed two semesters of study in this division.

STUDENTS' WORK REGULATIONS

Admission.—Students are accepted in extension classes whenever they manifest the desire, the maturity, and the ability to profit by the work. No university entrance requirements need be met. The only provision is that students shall be of such ability that their presence in a class will not impair the work of the rest of the class. Instructors will be the judges of this ability. In some classes of an advanced nature admission will be conditional on experience or preparation. No regulation is intended to exclude any student who can profit by the work. (For details dealing with regularly matriculated students, dropped students, see page 5 under Admission to Extension Classes.

Normal Load.—The maximum amount of extension work to be carried by students regularly employed in some vocation is 9 or 10 credit hours, the equivalent of 3 three-

credit or 2 five-credit classes, per semester. Twelve credit hours may be allowed by permission of the Students' Work Committee, provided the student's record of a previous semester shows an average of $1\frac{1}{2}$ honor points per credit hour. Permission for more than 12 credit hours may be granted under exceptional circumstances.

Correspondence Study.—Students may be enrolled for both extension classes and correspondence study courses only with the permission of the Students' Work Committee. The amount of work taken by such a combination may not exceed the permissible maximum stated in the paragraph above.

Attendance.—Attendance at every meeting of a class is expected; success in the work of a class is based on this attendance. Instructors are required to report continuous absences in order that the Students' Work Committee may inquire into the causes of absence and the student's intentions, may recommend what may be best for the student, and determine the student's status. Such inquiry and recommendation is entirely in the interest of the student and in no sense disciplinary; extension students are in classes for very definite purposes, are quite competent to govern their comings and goings, and may be trusted to give the attendance necessary to the accomplishment of their purposes.

Examinations.—Examinations in all classes are given during the last week of each semester. All students desiring credit must pass these examinations.

Other examinations or quizzes are entirely at the option of the instructor.

Examinations for the removal of the grade of Condition (E) will be given on application at a time and place agreed upon by the student and the instructor. A fee of one dollar (\$1), payable at any office of the General Extension Division, is charged for a condition examination.

Special examinations for advanced standing or for credit for work done elsewhere will be given on application. (See page 8.)

Grades.—Four grades, A, B, C, and D are given for work of varying degrees of merit, D being the lowest passing grade. Work below passing is marked E, a condition, or F, a failure. Work which is of at least D grade, but for acceptable reasons not complete, may be marked I, incomplete, provided not more than one fourth remains incomplete.

A condition is a temporary grade representing a deficiency which may be made up without repeating the course. It may be removed by additional work, by an examination, or by both. If not removed within two semesters following the resumption of the student's extension class work it becomes a failure. Pending such removal the student may register for a continuation or dependent class in a succeeding semester. The permanent grade resulting from the removal of a condition may not be higher than C.

A failure represents a deficiency so serious that the student must repeat the course in order to obtain credit in it. Following a failure the student will not be permitted to register for a continuation class.

Incomplete work may be completed in any way the instructor may prescribe, and should have the student's earliest attention. If this is not done within two semesters following the resumption of the student's extension class work the grade becomes a condition or a failure, as the instructor may elect, subject to the rules applying to those grades.

Credits and Honor Points.—Credits are used to indicate the amount of work done, in terms of the time spent in classes and in preparation for them. It is expected that at least two hours will be spent in preparation for every hour spent in class. Quality of work is expressed in honor points assigned to the several grades. Each credit with a grade of C carries one honor point; of B, two; of A, three. The grade D carries no honor point, and the grade F one minus honor point which cannot be cancelled by repeating the course with a passing grade.

Most of the colleges of the University make use of these honor points in determining student status, requiring an average grade of C (one honor point per credit) for

graduation, and making concessions to students with higher ratings. Students in extension classes who are seeking degrees should consult an officer of the college in which a degree is sought regarding the status of honor points in that college. The General Extension Division requires a C average for all its certificates.

Grade Reports.—Reports of students' grades are sent to the office of the university registrar at the close of each semester. A report of each student's grades and credits is sent from the office, and will not be furnished by the office of the General Extension Division.

Instructors are required to report at each mid-semester all grades below D, on the work so far completed. On the basis of these reports students are advised and counseled by the Students' Work Committee.

The Students' Work Committee.—This committee of the General Extension Division has direct supervision of the work done by students of the division. It functions in an advisory capacity for those desiring information about the sequence of courses, certificates, relation of extension classes to the work of other colleges, credits presented from other colleges, the organization of a program of study, and other similar matters. For candidates for degrees it offers its services in securing the advice and direction of the proper officials of the college concerned, from whom only can issue authoritative information.

Appointments with the committee may be made at any time by application at any office of the General Extension Division. Under ordinary circumstances these conferences should be held during usual business hours; during registration periods these hours are extended to the evening; at other times special appointments may be made as necessary.

THE UNIVERSITY LIBRARY

"Students registered in the Extension Division and attending classes in Minneapolis or St. Paul are entitled to draw books to be used in connection with their courses. They are subject to all library regulations including those in regard to return upon demand and to fines on overdue books." (Library Rules.) Extension students are urged to make as extensive use of the library as possible, for the enrichment of their study, and at times even for the basic matter of their classes. A copy of the *Library Handbook* which contains the rules applying to all students may be had at the loan desk.

THE MINNESOTA DAILY

Extension students may subscribe for the *Minnesota Daily*, student newspaper, at the regular mailing rates; these are \$3.50 for the school year, or \$1.25 per quarter, payable in advance. Application should be made to the business manager of the *Daily*, Pillsbury Hall.

ATHLETIC FACILITIES—FOR MEN

The use of university athletic facilities for men is open to extension students on the same basis as to full-time day students. The schedule of open hours, given below, should be quite convenient for extension students; they may take advantage of them either before or after classes. The use of these facilities, by any student, requires the payment of fees, listed below.

Gymnasiums: Open daily from 8:30 a.m. to 5:30 p.m.; during season of indoor sports, to 10:00 p.m. Fees: equipment, \$1, towel \$1, and locker 25 cents, per quarter, (11 weeks).

(A gymnasium or athletic uniform, consisting of a number of items, exclusive of shoes, may be rented for a fee of \$1 per quarter. The student, of course, may provide his own uniform.)

Swimming Pool: Open daily, 11:30 a.m. to 10:00 p.m. (Swimmers are asked to leave the pool between 9:30 and 9:45 in order to have time to dress before the building is closed.) Fees: towel \$1, and locker 25 cents, per quarter.

Fees are payable at the ticket office in the lobby of Cooke Hall—open until 5:30 p.m., except Saturday. Students unable to reach this office before 5:30 may remit a check to the Athletic Department for the services they wish. Locker and towel cards will then be left in care of the man in charge of the locker rooms, who is present until 10:00 p.m.

Golf Course: Students who are registered for extension classes for the second semester, or after April 1, may play golf at the University of Minnesota Recreation Field at the regular student rate until September 15. Identification cards must be procured in advance; they will be issued in presentation of receipted fee statements at the office in Cooke Hall. This can be done by mail.

FOR WOMEN

The facilities of the Women's Gymnasium are at the present time open only through the regularly scheduled extension classes, which offer an extensive program for those who wish to avail themselves of it.

STUDENT SEASON ATHLETIC BOOKS

The student season athletic book admits to all intercollegiate athletic events, except swimming, during the college year. It is a privilege book and consequently the privilege may be denied to any student who violates any of the conditions under which the book is issued.

Who May Purchase.—Any student enrolled in any department of the University, including Graduate, Extension, etc., whether regular or special, and carrying a minimum scholastic load of five quarter credits, or classes carrying a corresponding fee, who presents a receipted fee statement at the time of sale, covering a course of study running concurrent with the time for which the book is issued, is entitled to purchase one book if single, or two if married. **Students in correspondence study courses are not eligible to this privilege.**

The privilege books must be exchanged the first week in January for new privilege books, covering the winter and spring sports schedule. This exchange will not be made unless a receipted fee statement for the winter quarter or second semester is presented, except that extension students may make this exchange without a fee statement by paying a \$2 transfer fee per ticket, and thus obtain the privilege books for the winter and spring schedules. **This transfer fee will be applied to the registration fee for the second semester if the extension student enrolls for the second semester.** If the student fails to enroll for the second semester of the same academic year, the exchange ticket may be used for all remaining winter and spring sports, but the transfer fee will be retained by the Department of Athletics.

The price of the student book is \$7.

Where Purchased.—The sale begins Freshman Week each year and ends the day before the first game. Books may be purchased at the Minneapolis or St. Paul offices of the Extension Division or at the ticket booth in the Administration Building. Extension students are expected to make their purchases through the office, where they register. They must appear in person with fee statement. If the student is buying an additional book for husband or wife, the husband or wife must also be present at the time for the purpose of photographic identification.

Seat Location.—At football games the seat location will be in the student section. The Ticket Committee of the university faculty has the following regulation regarding the allocation of this section:

"The assignment of seats to students shall begin with the line between sections 5 and 6 and run east. Students shall be seated by classes in the following order: (1) seniors and graduate students, (2) juniors, (3) sophomores, (4) freshmen, (5) extension students."

This section is not open to nonstudents nor may students sit outside this section. Nonstudents will not be admitted to the student section at basketball games. For all other events the book admits to unreserved sections.

Cancellation of Registration—Refunds.—The student season book is a privilege extended to students only and it becomes void the moment an individual ceases to be a student in the University whether by cancellation of registration, expulsion, or in any other manner. The book is not transferrable and cannot be resold, nor will the purchase price be refunded after the book has been used for any event except in cases where the student is required, by the University, to cancel his registration.

When an extension student holding a book seeks a refund following cancellation, the book must be submitted with the application for refund. An adjustment of charges as between regular ticket rates and the season book rate will be made, and the balance of the season book charge refunded.

MINNEAPOLIS SYMPHONY ORCHESTRA

The Orchestral Association makes a special rate for season tickets to the regular concert season, applying to students who are registered for five credits or more. Receipted fee statements will be considered evidence of registration and will be stamped when tickets are purchased.

SCIENCE, LITERATURE, AND THE ARTS CLASSES

The classes offered in this department are selected from the program of the College of Science, Literature, and the Arts, or from the program of other colleges which give courses carrying credit in the College of Science, Literature, and the Arts. This selection makes available a portion, at least, of the university offerings in liberal arts to those who plan to take a college degree, and also to those who are interested in exploring for their own satisfaction the various fields of human knowledge.

CANDIDATES FOR DEGREES.—All students who have the slightest desire of taking or hope to take a Bachelor's degree should consult the Students' Work Committee regarding the details of the completion of the work of the Junior College, the application for acceptance in the Senior College, and the appointment of a major adviser. Work done in extension classes in Minneapolis, St. Paul, and Duluth may yield credits acceptable toward a degree, and counts for residence study; but unless this work is done with the advice and consent of the college it may not be accepted. The college itself says:

"The college has always required for graduation a definite period of residence in the Senior College and a minimum number of hours of Senior College courses. Under the new regulations which go into effect for students entering after September 15, 1936, the normal period of residence in the Senior College is six quarters. The amount of Senior College work may not be decreased by extra credits earned in the Junior College except by special permission at the time of the transfer to the Senior College. It is imperative that students should register in the Senior College as soon as they have completed the requirements for admission."

EXTENSION CERTIFICATES

Credits earned in this department may be applied towards either of two certificates which are offered by the General Extension Division for the completion of 90 credits of work, the equivalent of two years' full-time residence in the University. These certificates are as follows:

JUNIOR COLLEGE CERTIFICATE.—Requirements for this certificate correspond to the requirements for the first two years of the work of the College of Science, Literature, and the Arts. These represent one half of the work for a Bachelor's degree, and consequently, all of the credits must conform to degree standards as to the subjects and classes involved, prerequisites, and correspondence to similar courses offered in day classes. In addition, a candidate for this certificate must have met university entrance requirements, (see page 7).

I. To obtain this certificate the student must earn 90 credits and must maintain a C average. (Honor points may not be counted to reduce the total of 90 credits, but they may be applied whenever these credits are employed in meeting the requirements for admission to the Senior College of Science, Literature, and the Arts.)

II. The following group requirements must be met:

1. English Composition 4-5-6 (9 credits) or English A-B-C (15 credits) or exemption from the requirement. All students desiring to register for these classes will take a placement test. (See page 5.)
2. Foreign Language. A total of 20 credits (18 if in 3-credit units) in one foreign language, in high school and college courses combined. For every full year of such language presented for entrance, the above requirements shall be reduced 5 credits. Students, for instance, who have had two years of a foreign language in high school may complete by taking 10 credits in that same language in college courses.

The work done in English for a foreign language may be counted toward the subject requirement in Group A.

3. Ten credits (9 if in 3-credit units) in each of five subjects, one to be chosen from each of Groups A, B, C, and two to be chosen at large from Groups A, B, C, D.

Group A. *Humanities*: English and foreign languages and literature, speech, music, fine arts.

Group B. *Social Studies*: Anthropology, economics, geography, history, political science, sociology.

Group C. *Natural Sciences*: Astronomy, botany, chemistry, geology (including laboratory), physics, psychology (including laboratory), zoology.

Group D. Philosophy, mathematics.

III. These credits may be earned in any classes offered by the University, or by correspondence study courses, or may be transferred from another accredited institution under the regular university rules of transfer.

N.B.—To be acceptable toward this certificate credits must be earned in classes belonging to the Junior College—that is, numbered below 50.

IV. Students who have, previous to September, 1934, begun work on these requirements under the provisions existing at that time may complete under those provisions.

V. These requirements may be modified to conform to the requirements for admission to specific schools and colleges of the University, such as the prebusiness, premedical, pre dental, or other requirements. Specific information regarding this will be given by the Students' Work Committee.

VI. A student may not count credits for the beginning classes (two semesters) in more than one foreign language (exclusive of Greek and Italian), except on petition.

The order in which the credits are accumulated is not material. It is always best to take classes in one subject in their regular order, each preparing for that which follows. Outside of this, subjects or classes may be taken in any order to suit the student.

LIBERAL EDUCATION CERTIFICATE.—In contrast to the Junior College certificate this represents work that may be done without regard to any degree requirements, any particular sequence of classes, or prerequisites, except ability of the student to do the work of the class. The requirements are reduced to a minimum, that minimum being quite flexible; they are a requirement in English, a breadth or spread requirement, and a concentration requirement. The details are as follows:

1. English—9 credits, in any classes for which student has preparation.
2. Spread—at least 6 credits, two classes, in each of the three following fields: natural sciences (astronomy, botany, chemistry, geology, physics, psychology, zoology, or mathematics); social science (anthropology, economics, geography, history, political science, sociology); arts or humanities (fine arts, languages, philosophy, speech). Total 18 credits.
3. Concentration—at least 18 credits in one subject, or in closely related subjects.
4. Electives—45 credits. To make a total of 90. All elections may be made regardless of college lines, as student interest dictates.

This certificate is recommended to those who are not interested in a college degree, but nevertheless wish to pursue their study with some sort of system and organization.

Extension classes are open to registration by any person qualified to profit by the study. Ordinarily only those who expect to qualify for a university degree will be expected to meet the requirements of prerequisites. Prerequisites are stated for the information of such students.

Science, Literature, and the Arts classes numbered 100 and above are taught by regular members of the graduate faculty, require a large amount of outside reading, with term reports, and all registering for them, auditors as well as those working for credit, must have had all the prerequisites.

DESCRIPTION AND PROGRAM OF CLASSES

ACCOUNTING

(See *Business Classes*, page 52)

ADVERTISING

(See *Business Classes*, page 54)

AIR CONDITIONING

(See *Engineering Classes*, page 69)

ANATOMY

5 General Human Anatomy. 4 credits. \$13.50.

A nontechnical class of general interest. Study of dissected specimens; no dissection. Zoology 1-2 recommended for preliminary study.

FIRST SEMESTER

MW 7:30 Campus Anatomy 301, Pass

6 Medico-Legal Anatomy. 4 credits. \$13.50.

Lecture and demonstration class. Primarily for lawyers.

SECOND SEMESTER

MW 7:30 Campus Anatomy 301, Pass

ART

(See *Art Education*, p. 43; *Engineering*, p. 63; *Orientation*, p. 30)

ASTRONOMY

11 Descriptive Astronomy. 3 credits. \$10.

The general principles and fundamental facts of astronomy; illustrated by lantern slides, simple problems, and naked eye and telescopic observations. Higher mathematics not necessary. No prerequisites.

FIRST SEMESTER

W 6:20 Campus Physics 133, Luyten

13 Practical and Stellar Astronomy. 3 credits. \$10.

Supplements Astronomy 11, which however is not prerequisite; higher mathematics not necessary. A detailed description of the constellations and individual stars, the structure of the sidereal universe, and such problems as the determination of time from the stars; extended opportunity for the use of the telescope and the observation of the heavenly bodies.

SECOND SEMESTER

W 6:20 Campus Physics 133, Luyten

BACTERIOLOGY

41 General Bacteriology. 5 credits. \$17 and \$2 laboratory fee.

Culture media; methods of staining and identification; principles of sterilization and disinfection; examination of air, water, milk; relation of bacteriology to the industries. Prereq. for degree, 10 cred. in chemistry and 10 cred. in biology.

FIRST SEMESTER

TTh 7:30 Campus Millard 214, Skinner

102 Special Bacteriology. 4 credits. \$13.50 and \$2 laboratory fee.

The pathogenic bacteria especially in relation to definite diseases: principles of infection and immunity. For technicians and others. Prereq. for degree: Bact. 41.

SECOND SEMESTER

TTh 7:30 Campus Millard 214, Novak

116 Immunity. 3 credits. \$10 and \$2 laboratory fee. Meets for one quarter, 11 weeks.

General and special laboratory technique; immunological phenomena; preparation of vaccines; production and collection of immune sera; demonstrations of various immune substances; technique of forensic blood tests, the Wasserman test, modified Wasserman, and the Kahn test; allergy, anaphylaxis, atopy; blood grouping. Primarily for technicians; for prerequisites for credit, see instructor. Class limited to 25 students.

FIRST SEMESTER

MW 7:30 Campus Millard 214, Novak

114 Yeasts, Molds, and Actinomycetes (Higher Bacteria) offered 1939-40**152 Bacteriological Methods.** 5 credits. \$17 and \$2 laboratory fee.

A laboratory class in standard and approved methods for the bacteriological examination of water, milk, and foods; preparation and use of standard culture media; methods for standardization of germicides. Prereq., Bact. 41.

SECOND SEMESTER

MW 7:30 Campus Millard 201, Skinner

BIRDS OF MINNESOTA*(See Zoology Classes, page 41)***BOOK REVIEWS***(See English Classes, page 23)***BOTANY****1 General Botany.** 4 credits. \$13.50.

A survey lecture course on plants and their human interest, contributing to liberal culture; characteristics of living matter; fundamental facts of structure, growth, and reproduction; relation of plants to their environment and to each other; principles underlying inheritance, variation, plant breeding, and organic evolution. No prereq.

FIRST SEMESTER

M 6:20-8:30 Campus Botany Aud., Huff

10ex Minnesota Plant Life. 3 credits. \$10.

A study of our native wild flowers, trees, shrubs, ferns, liverworts, mosses, lichens, and mushrooms. A class for teachers, camp and scout leaders, and all who would know more of our native plants and their habits. No prereq.

SECOND SEMESTER

M 6:20 Campus Botany 4, Huff

2 General Morphology of Plants. 3 credits. \$10.

A laboratory course in evolution and classification of plants. Study of habits, structure, and reproduction of selected types of algae, fungi, liverworts, mosses, ferns, and seed plants. A general survey of entire plant kingdom.

FIRST SEMESTER

W 6:20 Campus Botany 1, Huff or assistant

7 Taxonomy of Flowering Plants. 3 credits. \$10.

A general study of the classification and relationships of flowering plants. For prerequisite consult instructor.

SECOND SEMESTER

W 6:20 Campus Botany 1, Rosendahl or
assistant

Home Gardening I. No credit. 17 weeks. \$10.

A class for those who want home surroundings beautiful with growing things, and like to take a hand in the growing process. Attention to soil and seeds; planting and transplanting; propagation of plants, shrubs, annual and perennial plants, and vines; designing a garden; care and maintenance—in fact just the things a home gardener needs, and wants to know. Lectures, demonstrations, discussions, and projects for working out—practical and instructional. Open, without prerequisites, to all who are interested.

SECOND SEMESTER

W 8:05 Campus Botany 5, Phillips

Home Gardening II. No credit. 17 weeks. \$10.

A continuation of Home Gardening I dealing with special gardening problems in greater detail; garden construction and maintenance, fall work in the garden, plant propagation and culture, with some attention to indoor gardening or house plant culture. Lectures, demonstrations, and student projects. Open to all.

FIRST SEMESTER

W 8:05 Campus Botany 5, Phillips

Garden Design and Materials. No credit. 17 weeks. \$10.

An introduction to the principles and practice of landscape design, especially for amateur gardeners who wish to know more about planning as well as planting gardens and home grounds; combined with a study of plant materials—trees, shrubs, vines, and herbaceous plants with special reference to their use and importance in landscape gardening. Illustrated lectures and design problems a feature. Open to all.

FIRST SEMESTER

T 8:05 Campus Botany 4, Phillips

CARTOONING

(Not offered, 1938-39)

CHEMISTRY

(See Engineering Classes, page 64)

CHILD WELFARE**40 Child Training.** 3 credits. \$10.

The physical and mental development of the child; the training of young children; behavior problems and their various aspects; techniques of good and bad management. Prereq. for degree, Psy. 1-2.

FIRST SEMESTER

W 6:20 Mpls. N. W. Bank Bldg, 690,
Faegre

SECOND SEMESTER

M 8:05 St. Paul Ext. Center 203, Cummings

80 Child Psychology. 3 credits. \$10.

A survey of the psychology of the young child from the standpoint of development and learning. Prereq., Psy. 1-2.

SECOND SEMESTER

T 7:30 Campus Folwell 105, Cushing

82 Later Childhood and Adolescence. 3 credits. \$10.

The meaning of adolescence; growth and personality development; vocational guidance; sex education, social adjustment, and emancipation from the family. Prereq., Psy. 1-2.

FIRST SEMESTER		SECOND SEMESTER	
M 8:05	St. P. Ext. Center 200, Cummings	T 6:20	Mpls. N. W. Bank Bldg. 690, Faegre

140 Behavior Problems. 2 credits. \$7.

Nature and origin of behavior difficulties. Emphasis of the relation between early behavior trends and later maladjustment. Prereq., 12 cred. in psy., ed. psy., or soc.

FIRST SEMESTER	
T 7:30	Campus Folwell 105, Cushing, Griffiths

CLASSICS*(In English)**(Formerly listed as Greek in English)***47 Ancient Sources of the Modern World.** 3 credits. \$10. No knowledge of Latin or Greek necessary.

A survey of the contributions of ancient Greece and Rome to modern civilization in such fields as art and architecture, economics, engineering, language, law, literature, philosophy, and political science; illustrated lectures. No prereq.

FIRST SEMESTER	
M 6:20	Campus Folwell 114, Heller

48 Classical Literary Tradition; Roman and Medieval. 3 credits. \$10. No knowledge of Latin or Greek necessary.

A study of literary forms and motifs in their tradition from classical literature to that of later periods; designed especially for students of modern literature. (Emphasis on Roman and later literature, supplementing but not duplicating the work on Greek literature of the past year.) No prereq.

SECOND SEMESTER	
F 6:20	Campus Folwell 114, Ogle

ECONOMICS*(See Business Classes, page 58)***ENGLISH***Classes in Composition***Subfreshman Composition.** No credit. \$7.50.

Intensive drill on grammatical forms, structure, and theme writing. Note Composition 4-5-6 below.

FIRST SEMESTER		SECOND SEMESTER	
T 6:20	St. Paul Ext. Center 204, Dickerman	W 8:05	Campus Folwell 212, Dickerman
Th 6:20	Campus Folwell 212, Dickerman		

4-5-6 Freshman Composition. 3 credits each semester. \$10.

These classes satisfy the requirement in English for graduation and are prerequisites to other English classes. Must be taken in sequence. Admission based on satisfactory score in English Placement Test, or satisfactory completion of Subfreshman Composition. The Placement Test is not a barrier to the student but is designed to determine as accurately as possible the student's probable success and thus prevent his attempting study for which he is inadequately prepared. As a result of the test, the student may be: (1) exempted from the requirement in English, (2) assigned to Composition 4, or (3) required to register for Subfreshman Composition. Please note the following:

1. If you took the Placement Test in high school within the last four years, you must ask for assignment to the proper composition class a week before the first meeting of the class. (You need not take the test again.) Telephone, write, or call in person.

2. If you have not taken the test, report for it at the first scheduled date. (See page 5.)

3. Tests will be given only as scheduled, and you cannot be admitted to a class for credit, without taking the test.

4. Normally no student will be admitted to a class in Composition 4, 5, or 6 unless he has attended the first or second meeting.

5. If these regulations are not clear, or present seemingly insurmountable obstacles, apply for information at any office of the General Extension Division.

FIRST SEMESTER				SECOND SEMESTER			
4	T	6:20	Campus Folwell 226, Grandy	4	T	6:20	Campus Folwell 205, McFadyen
	W	6:20	Campus Folwell 102, Conklin		W	8:05	Campus Folwell 204, Buckley
	W	8:05	Campus Folwell 204, Buckley		Th	8:05	St. P. Ext. Center 204, Lefevre
	Th	6:20	Campus Folwell 204, Christie	5	T	6:20	Campus Folwell 226, Grandy
	Th	6:20	St. P. Ext. Center 204, Dworsky		W	6:20	Campus Folwell 102, Conklin
5	T	6:20	Campus Folwell 213, Scallon		Th	6:20	Campus Folwell 204, Christie
	Th	8:05	St. P. Ext. Center 204, Lefevre		Th	6:20	St. P. Ext. Center 204, Dworsky
6	Th	6:20	Campus Folwell 226, McFadyen	6	T	6:20	Campus Folwell 213, Scallon

Writing Laboratory. No credit. \$5.

Open to all. May be taken as a supplement to any composition class, or independently. Provides opportunity to write in a quiet room equipped with standard reference books. Two instructors will personally aid students in solving writing problems on the spot as they develop. Students may register at any time during the semester; may come and go at will during the writing period.

FIRST SEMESTER		SECOND SEMESTER	
M	6:20-9:30	M	6:20-9:30
	Campus Folwell 12, Avery and assistant		Campus Folwell 12, Avery and assistant

27-28† Advanced Writing. 3 credits each semester. Both required for credit. \$10.

Continues the study of writing beyond composition 4-5-6. Prepares for Short Story Writing and Essay Writing. Prereq., Comp. 4-5-6, exemption, or permission of instructor.

FIRST SEMESTER		SECOND SEMESTER					
27	T	6:20	Campus Folwell 203, Avery	28	T	6:20	Campus Folwell 203, Avery
28	Th	6:20	Campus Folwell 203, Avery	27	Th	6:20	Campus Folwell 203, Avery

29 Advanced Writing (third quarter) 3 credits. \$10.

For those who want still further experience and instruction in writing without limiting themselves to the specific technique of the short story. Personal criticism of whatever type of writing the student wishes to submit. Prereq., Comp. 27-28, or permission of the instructor.

FIRST SEMESTER		SECOND SEMESTER					
29	Th	8:05	Campus Folwell 203, Avery	29	Th	8:05	Campus Folwell 203, Avery

69-70† Short-Story Writing I and II. 3 credits each semester. Both required for credit. \$10.

The technique of the short story with constructive work in story writing. For those with experience in writing. Prereq., average of B in two semesters of 27-28, 29 or 65.

FIRST SEMESTER		SECOND SEMESTER					
69	M	6:20	Campus Folwell 205, Briggs	70	M	6:20	Campus Folwell 205, Briggs

81-82-83 Essay Writing. 3 credits each semester. \$10.

Practice in writing informal essays and simple critical essays. Personal criticism of student work. Some reading in essay literature. 81 and first half of 82 in first semester;

balance in second. Prereq., average of B in two quarters of 27-28, 29, or permission of instructor.

	FIRST SEMESTER		SECOND SEMESTER	
81-82	T 8:05	Campus Folwell 203, Avery	82-83	T 8:05 Campus Folwell 203, Avery

91-92 Seminar in Writing (Advanced Short Story). 3 credits each semester. \$10.

For advanced students who write with facility and desire personal direction. Criticism of manuscript submitted. Prereq., senior standing and 9 credits in Senior College English courses.

	FIRST SEMESTER		SECOND SEMESTER	
91	M 8:05	Campus Folwell 304, Phelan	92	M 8:05 Campus Folwell 304, Phelan

English for Every Day. No credit. Meets for one quarter, 12 weeks. \$7.50.

Drill in the mechanics of good English; clearing up common errors in grammar; usage; sentence structure for those grown careless or puzzled as to correct form, or for teachers desiring a simple method for language fundamentals. No prereq.

	FIRST SEMESTER	
M	8:05	St. Paul Ext. Center 204, Hayes
W	6:20	Campus Folwell 205, Hayes

Writing for Every Day. No credit. Meets for one quarter, 12 weeks. \$7.50.

A simple but fundamental class in written English. Collecting and arranging material; writing the paragraph and longer units—letters, book reviews, and short narrations; punctuation; review of grammar and sentence structure. For those who dictate letters, or write them, and those who wish to do original writing. No prereq.

	FIRST SEMESTER	
Th	6:20	Campus Folwell 201, Hayes

Vocabulary Reading. See Speech Classes, page 40.

Business English. See Business Classes, page 57.

Radio Script Writing. See Business Classes, page 55.

Classes in Literature

Books. Credit for extension certificate only. \$10.

A class for those who wish to learn to read with greater comprehension and pleasure. Each member of the class will purchase one book of his own choosing. During the semester students will exchange books with one another. Class discussions will be devoted to a consideration of what good literature is; what one looks for in a novel, in a poem, a play; how one goes about building up a library; what care a small private library requires. A class for anyone who is interested in books, or who would like to acquire such an interest. The two semesters are continuous, not repetitive, and students may enter either. No prereq.

	FIRST SEMESTER		SECOND SEMESTER	
M	6:20	Campus Folwell 202, Kranhold	M	6:20 Campus Folwell 202, Kranhold

22-23 Introduction to Literature. 5 credits each semester. \$17. Meets for one period of 3 hours each week. Two consecutive semesters required for credit.

A study of English literature as to history and types of writing. 22, eighteenth century; 23, nineteenth century. Prerequisite to major in English; 22 and 23 required for teacher's certificate. Students may enter any semester. Prereq., Comp. 4-5-6, or exemption.

	FIRST SEMESTER		SECOND SEMESTER	
22	M 6:20	Campus Folwell 204, Dunn	23	M 7:00 Campus Folwell 204, Dunn
	W 6:20	St. Paul Ext. Center 201, Hessler		W 6:20 St. Paul Ext. Center 201, Hessler

Judging Modern Books and Plays. See Journalism Classes, page 28.

A class designed to assist the reader in passing critical judgment on books and plays as they appear. Open to all with or without credit.

55-56† Shakespeare. 3 credits each semester. \$10. Both required for credit.

Shakespeare's development as a dramatist; a careful study of a selected list of plays. Prereq., Comp. 4-5-6, or exemption, and 6 additional credits, or 10 credits in 21-22-23.

FIRST SEMESTER		SECOND SEMESTER	
55	T 6:20	Campus Folwell 101, Nichols	56 T 6:20 Campus Folwell 101, Nichols

40-41 Bible As Literature I and II. 3 credits each semester. \$10.

A study of the Bible with relation to the history out of which it grew, with special attention to literary form. First semester (40) deals with history and biography, second semester (41) with prophecy and poetry. Prereq., Eng. 4-5-6.

FIRST SEMESTER		SECOND SEMESTER	
40	W 4:30	St. P. Pub. Lib. 7, Powell	41 W 4:30 St. P. Pub. Lib. 7, Powell
	Th 4:30	Mpls. N. W. Bank Bldg. 690, Powell	Th 4:30 Mpls. N. W. Bank Bldg. 690, Powell

62 Milton. Not offered 1938-39.

80ex Browning and Tennyson. 3 credits. \$10.

A study of the chief poets of the Victorian age with particular attention to the intellectual and social problems of the time. Prereq., Eng. 4-5-6 (or exemption) and 6 additional credits, or 10 credits in Eng. 21-22-23. (Students will not receive credit for both Eng. 80ex and Eng. 169.)

FIRST SEMESTER	
T 4:30	Mpls. N. W. Bank Bldg. 690, Powell
T 7:00	St. P. Pub. Lib. 7, Powell

73-74† American Literature. 3 credits each semester. Both required for credit. \$10.

Lectures on American literature with extensive readings from the principal poets and prose writers of the United States; some attention to novelists. For prereq., consult instructor.

FIRST SEMESTER		SECOND SEMESTER	
73	W 6:20	Campus Folwell 105, McDowell	74 W 6:20 Campus Folwell 105, McDowell

Book Reviews. No credit. Ten regular periods. \$6.

The most interesting books of the season—fiction, biography, travel—presented in a series of informal lectures. Open to all.

FIRST SEMESTER	
M 6:20	Campus Folwell 105, Acker
T 7:00	St. Paul Ext. Center 206, Acker

Biography. No credit. Ten regular periods. \$6.

Book reviews of outstanding biographies and autobiographies. Each lecture presents an interesting personality—something of his background and achievement. Open to all.

FIRST SEMESTER	
T 4:15	St. Paul Ext. Center 201, Acker
W 6:20	Campus Folwell 101, Acker

Book and Play Review. No credit. Ten regular periods. \$6.

Reviews of the season's most interesting books and plays. During January the instructor will be in New York to see the current plays and will devote about half the time of this class to presenting the most interesting ones; reviews of spring books, fiction, and nonfiction, will occupy the remainder.

SECOND SEMESTER	
W 6:20	Campus Folwell 104, Acker
Th 6:20	St. Paul Ext. Center 206, Acker

Literature and Life. Credit for certificate only. \$10.

Designed to help the average reader discover how great literature of the past throws light on modern political and social problems. First semester, Carlyle and Ruskin in particular; second semester, Rudyard Kipling. Open to all.

FIRST SEMESTER
W 6:20 St. P. Pub. Lib. 7, Powell

SECOND SEMESTER
W 6:20 St. P. Pub. Lib. 7, Powell

Th 6:20 Mpls. N. W. Bank Bldg. 690, Powell Th 6:20 Mpls. N. W. Bank Bldg. 690, Powell

FARM MANAGEMENT**Farm Management.** No credit. \$10.

Principles underlying the organization and management of farms, with special reference to Minnesota conditions; the influence of soil crops, livestock, labor, power, machinery, equipment, and other factors on the earning power of the farm.

FIRST SEMESTER
M 6:20 St. Paul 346 Jackson St., Room 224,
Cleland

FINE ARTS

See classes in Art Education, page 43; Drawing, see Engineering, page 63; Orientation, page 30.

GEOGRAPHY**11 (51) Human Geography.** 5 credits. \$17.

A study of the factors of the environment (space relationships, climate, soils, drainage, topography, mineral wealth, contact with the sea, fauna, and flora) with particular reference to their limiting effect on human activities. Projects of current interest, such as Boulder Dam, T.V.A., Soil Conservation, and Flood Control will be used as illustrative materials. Basic for all geography classes. Counts toward either a major or a minor in geography. No prereq.

FIRST SEMESTER
T 6:20 Campus Burton 103, Davis

53 Historical Geography of North America. 3 credits. \$10.

A study of the geography of past periods of American history, with special emphasis on the geography of the Atlantic seaboard. Counts toward either a major or a minor in geography. Prereq. 11, or 15 credits in history.

SECOND SEMESTER
T 6:20 Campus Burton 103, Brown

71 Geography of North America. 3 credits. \$10.

A consideration of environmental conditions and their limiting effect on economic activities in the major geographic regions of the United States and Canada. A study of the basis for development of the major urban centers and their supporting economic activities. Counts toward either a major or a minor in geography. Prereq., Geog. 11.

SECOND SEMESTER
T 6:20 St. P. Ext. Center 203, Dicken

110 Geography of South America. 3 credits. \$10.

A study of the major geographic regions of South America, the environmental basis for each, and the limiting effect of these conditions on economic activities. Counts toward either a major or a minor in geography. Prereq. for degree credit, 8 credits in geography.

FIRST SEMESTER
W 6:20 St. P. Ext. Center 208, Brown

GEOLOGY

1 General Geology (Dynamic). 3 credits. \$10.

A General Geology Laboratory. 2 credits. \$7.

These classes, 1 and A combined, constitute Geology 1 of the College of Science, Literature, and the Arts. They consist of an introductory treatment of the materials of the earth, and the geologic processes; principles of earth sculpture, glaciation, volcanic activity, mountain building, etc.; geologic occurrence of gems, ores, oil, and other economic mineral resources. No prereq.

N.B.—Registration may be made for the combined classes or for Geol. 1, but it is recommended that they be taken together. Students who have completed 3 credits in Geol. 1 or 8 may register for Geol. A.

FIRST SEMESTER

1 T 6:20 Campus Pillsbury 210, Thiel
A T 8:05 Campus Pillsbury 220, Frey

2 Historical Geology. 3 credits. \$10.

B Historical Geology Laboratory. 2 credits. \$7.

These classes, 2 and B combined, constitute Geology 2 of the College of Science, Literature, and the Arts. A study of the changing geology and life of the earth during the geologic past as interpreted from the rock records. Prereq., Geol. 1 or 8.

N.B.—Registration may be made for the combined classes, or for Geol. 2, but it is recommended that they be taken together. Students who have completed 3 credits in Geol. 2 may register for Geol. B.

SECOND SEMESTER

2 T 6:20 Campus Pillsbury 210, Hanley
B T 8:05 Campus Pillsbury 220, Hanley

4 Geology of Minnesota. Not offered 1938-39.

19 Physiography of the United States. Not offered 1938-39.

20 Glacial Geology. 3 credits. \$10.

Nature and process of glacial action; land forms resulting from alpine and continental glaciers; character and distribution of Pleistocene and earlier glacial deposits: deposits of Minnesota; history of the Glacial Great Lakes and such glacial lakes of Minnesota as Lake Duluth and Lake Agassiz; development of Mississippi, Minnesota, and St. Croix valleys. Field inspection of typical glacial areas in Twin City area. Prereq. for degree, Geol. 1 or 8.

FIRST SEMESTER

Th 6:20 Campus Pillsbury 206, Hanley

23 Mineralogy. Not offered 1938-39.

25 Elements of Rock Study. 3 credits. \$10.

A study of rock-forming minerals and of igneous, sedimentary, and metamorphic rocks, their occurrence and classification. For prerequisites for degree consult instructor.

FIRST SEMESTER

Th 6:20 Campus Pillsbury 110, Gruner

GERMAN

1-2-3 Beginning German A, B, C. 5 credits each. \$17.

N.B.—Classes in German 1-2-3-4 are offered in 5-credit units to correspond with regular day classes, meeting one period a week for 3 hours, each course counting as equivalent to one year preparatory school German.

FIRST SEMESTER			SECOND SEMESTER		
1	M 6:20	Campus Folwell 207, Downs	2	M 6:20	Campus Folwell 207, Downs
	Th 6:20	St. P. Ext. Center 208, Pröttengeier		Th 6:20	St. P. Ext. Center 208, Pröttengeier
3	M 6:20	Campus Folwell 206, Wangsness			
	W 6:20	St. P. Ext. Center 200, Meessen			

4 Intermediate German. 5 credits. \$17.

Modern narrative prose. Prereq., 3.

SECOND SEMESTER	
M 6:20	Campus Folwell 206, Wangsness
W 6:20	St. P. Ext. Center 200, Meessen

17 German for Graduate Students. No credit. \$10.

Enables candidates for advanced degrees to acquire a reading knowledge of German. Presupposes no knowledge of the language.

FIRST SEMESTER		SECOND SEMESTER	
M 6:20	Campus Folwell 212, Lussky	M 6:20	Campus Folwell 212, Lussky

50-51-52† German Composition and Conversation. 3 credits each semester. \$10.

A practical class in oral and written German; makes use of matters common in every-day speaking and writing. Class 50 and half of 51 in first semester; remainder in second. All required for credit in any. Prereq., German 4.

FIRST SEMESTER		SECOND SEMESTER			
50-51	Th 6:20	Campus Folwell 202, Munro	51-52	Th 6:20	Campus Folwell 202, Munro

HISTORY

1-2† European Civilization (Formerly called Modern World). 5 credits each semester. \$17.

Political, social, and economic factors. Course 1—500-1799; Course 2—1799 to the present. Both required for credit. Meets 3 hours once a week. No prereq.

N.B.—History 2 is an excellent preparation for Philosophy 70, which please note.

FIRST SEMESTER			SECOND SEMESTER		
1	M 6:20	Campus Folwell 104, Mudgett	2	M 6:20	Campus Folwell 104, Mudgett
	T 6:20	St. P. Ext. Center 200, Mudgett		T 6:20	St. P. Ext. Center 200, Mudgett

7-8† American History. 3 credits each semester. \$10. Hist. 7-8-9 required for credit.

Course 7—1766-1840; 8—1840-1877. No prereq.

FIRST SEMESTER			SECOND SEMESTER		
7	M 6:20	St. P. Ext. Center 200, Kane	8	M 6:20	St. P. Ext. Center 203, Kane
	T 6:20	Campus Folwell 104, Kane		T 6:20	Campus Folwell 104, Kane

9 Recent American History (since 1877). 3 credits. \$10.

Special emphasis on the social and economic factors. Prereq., Hist. 7-8.

FIRST SEMESTER	
W 6:20	Campus Folwell 104, Kane

56-57-58† Early Modern European History. 3 credits each semester. \$10. All required for credit.

Course 58, the Napoleonic Era, will be offered, to complete the sequence begun in 1937-38.

FIRST SEMESTER

Th 6:20 Campus Folwell 105, Kane

65-66† Europe since 1871. 3 credits each semester. \$10. Both required for credit.

Course 65—1871 to 1914; 66—1914 to present. The background and causes of the World War, the Versailles Conference and the peace treaties, the new governments in Europe, and conflicts between democracy, communism, and fascism, particularly in Russia, Germany, Italy, and France; the chief present-day menaces to world peace. Both required for credit. Prereq., senior standing.

FIRST SEMESTER

65 T 8:05 Campus Folwell 104, Kane

SECOND SEMESTER

66 T 8:05 Campus Folwell 104, Kane

80-81-82† Introduction to Economic History. 4½ credits each semester. \$15. All required for credit.

Survey of man's efforts to make a living from early times to the present. Emphasis upon European economic developments from which present-day society is derived. Prereq., Senior College standing.

FIRST SEMESTER

80-81 Th 6:20 Campus Folwell 104,
Mudgett

SECOND SEMESTER

81-82 Th 6:20 Campus Folwell 104,
Mudgett

93a-94a-95a† Survey of Latin-American History. 3 credits each semester. \$10. All required for credit.

History of Mexico, the Caribbean, Central America, and South America, from pre-historic times to the present. 93a—prehistoric and colonial periods to 1810; 94a—Mexico, the Caribbean, and Central America since 1810; 95a—South America since 1810. Students may enter either semester. 95a not offered 1938-39.

FIRST SEMESTER

93a W 6:20 Campus Burton 221, Jones

SECOND SEMESTER

94a W 6:20 Campus Burton 221, Jones

HOW TO STUDY

1 How To Study. 2 credits. \$10.

Instruction and practice in the art of effective study, as applied to subject-matter taught in colleges. Of value to all who desire to get the most out of their study efforts. Deals with the budgeting of time, efficient reading, organizing knowledge, and similar techniques. A portion of the class time will be devoted to actual practice in study. No prereq.

FIRST SEMESTER

T 6:20 Campus Folwell 102, Baker

JOURNALISM

13 Introduction to Reporting. 3 credits. \$10.

A study of news, its sources, methods of finding and gathering; correct style of written presentation; brief survey of the place and purpose of the newspaper and the processes of newspaper production. Prereq. for college credit, Eng. Comp. 4-5-6, or exemption.

FIRST SEMESTER

W 8:05 Campus Pillsbury 14, Steward

69 Newspaper and Magazine Articles. 3 credits. \$10.

The special feature article; typical subjects and their preparation for magazines, trade papers, Sunday newspapers, syndicates, house organs, etc.; the qualities that make stories salable, and the market; principles of illustration. Prereq. for college credit, Introduction to Reporting 13.

SECOND SEMESTER

W 8:05 Campus Pillsbury 14, Steward

76 Judging Modern Books and Plays. 3 credits. \$10. Equivalent to Critical Writing.

A class for the reader who wishes to approach modern works with a better discrimination; not a technical journalism class. Standards of judgment and the need for them; application to fiction, poetry, essays, biography, criticism, humor, scientific, and philosophical writings; the modern theater and its development; the work of the dramatic critic; the motion picture and its present stage of development; responsibility of reviewers. Open to all; degree students consult instructor for prerequisites.

FIRST SEMESTER

T 8:05 Campus Folwell 110, Ford

MATHEMATICS

(Numbers of classes are those used in the College of Science, Literature, and the Arts)

20a&b Mathematics of Investment. Not offered 1938-39.

- A-Bex Elementary Algebra
- Cex Solid Geometry
- 5 Higher Algebra
- 6 Trigonometry
- 7 College Algebra
- 30 Analytic Geometry
- 50 Differential Calculus
- 51 Integral Calculus

For description and program of these classes see Engineering Classes, page 68.

*106 Differential Equations. Not offered 1938-39.***MEDICINE****Allergy and Allergic Diseases.** No credit. Eight weekly meetings. \$5.

A lecture course covering the fundamentals of the nature of allergy; the clinical manifestations including hay fever, asthma, urticaria, migraine, etc.; the substances which provoke allergic symptoms, methods of preparation, and use in testing and desensitization. Prereq., M.D. degree, or permission of instructor.

FIRST SEMESTER

T 7:30 Campus Med. Sci. 12, Ellis

Tuberculosis and Other Diseases of the Chest. Open to practicing physicians only. \$10.

Diagnosis and treatment of bronchitis, bronchiectasis, bronchial asthma, pulmonary abscess, pneumoconiosis (particularly silicosis), carcinoma, etc. The new viewpoint on tuberculosis control will be presented, with the most modern methods of diagnosis and treatment, with special emphasis on artificial pneumothorax.

FIRST SEMESTER

Th 8:05 Campus Univ. of Minn. Hosps.,
Eustis Aud., Myers

P.M.&P.H.60 Tuberculosis and Its Control. \$10.

A nontechnical class, particularly for nurses, social workers, teachers, and others interested. History of tuberculosis movement and campaign in the United States; early diagnosis and sanitary treatment; tuberculosis in children; psychology of tuberculosis; supervision of returned sanatoria patients; state program for the eradication of tuberculosis; legislation. For credit and prerequisites consult instructor.

SECOND SEMESTER
Th 7:30 Campus Univ. of Minn. Hosps.,
Eustis Aud., Myers

Preventive Medicine and Public Health. See Education Classes, page 48.

MUSIC

N.B.—Individual instruction in music, as well as study in the regular classes offered by the Department of Music, is open to registration through the General Extension Division by students who are not able to attend day classes full time. This includes instruction in piano, organ, voice, violin, cello, and all orchestral instruments, as well as classes in history and theory of music. Students will register as for extension classes but attend the regular day sessions. The courses offered, the time and place of meeting, and the fees for individual instruction will be found in the program of classes for the College of Science, Literature, and the Arts, in the Combined Class Schedule. For further information consult any office of the General Extension Division.

1-2-3 Ear Training and Sight Singing. 2 credits each semester. \$10.

The aural recognition of tonal relationships, based on a study of scales, intervals, and chords; developed through pitch groups, melodic and harmonic dictation, and sight-singing. No prereq. Basic in all music courses of study.

FIRST SEMESTER		SECOND SEMESTER	
1	Th 6:20 Campus Music 4, Kendall	2-3	Th 6:20 Campus Music 4, Kendall

4-5-6 Harmony (First Year). 3 credits each semester. \$10.

Study of chords, their construction, relations, and progressions. Each semester corresponds to a quarter in day classes. No prereq.

FIRST SEMESTER		SECOND SEMESTER	
4	T 6:20 Campus Music 103, Malcolm	5	T 6:20 Campus Music 103, Malcolm
6	M 6:20 Campus Music 103, Malcolm		

34-35-36† History of Music. 3 credits each semester. \$10.

A course in historical appreciation, designed to give an understanding of music as literature; a nontechnical account of the principal music forms, the historic origins and associations; the nature and scope of musical expression. Extensive musical illustrations. 34 and half of 35 first semester, remainder second semester; all required for credit. No prereq.

FIRST SEMESTER		SECOND SEMESTER	
34-35	Th 6:20 Campus Music 103, Ferguson	35-36	Th 6:20 Campus Music 103, Ferguson

40-41-42 Orchestra. Not offered 1938-39.

56-57-58† Bach, Beethoven, Wagner, and Brahms. 3 credits each semester. \$10.

Critical study of selections from the master works of the four greatest composers: biographical readings, topics and analyses, giving historical and literary background to culminative periods in composition. Open to those who have been in extension classes in music appreciation. 56-57 not offered 1938-39. All required for credit. Prereq., Mu. 8-9-10.

FIRST SEMESTER	
58	W 6:20 Campus Music 103, Ferguson

58Aex Wagner's Ring of the Nibelungen. No credit. \$10.

Detailed study of the Ring, following the plan of 56-57-58, which is prerequisite.

SECOND SEMESTER

W 6:20 Campus Music 103, Ferguson

G.C.122-123 Music for Every Day. 3 credits each semester, in General College only. \$10.

Designed to give the student an opportunity to get the most out of the music he hears every day. Enjoying music is largely a matter of getting acquainted with it—and this comes only through repeated hearing. A lecture period of one hour, in which the essentials of music will be discussed, will be followed by a one-hour listening period, employing recordings of the music discussed in the lecture. Opportunity will also be provided for preparing for local concerts or important radio programs. A class for those who like music and wish to increase their enjoyment of it; not for the professional students of music. No prerequisites. Open to all.

FIRST SEMESTER

W 7:00 Campus Wesbrook 306A, Hill

SECOND SEMESTER

W 7:00 Campus Wesbrook 306A, Hill

NURSING

(See Education Classes, page 46)

ORIENTATION**1-2† Man in Nature and Society I-II.** 3 credits each semester. \$10.

A survey of certain aspects of contemporary thought concerning the specific physical and social sciences; nontechnical, designed for the layman. First semester, physical; second semester, social sciences. No laboratory work and no knowledge of science required. No prereq. For degree, both required for credit.

N.B.—Students may enter either class; 1 is not prerequisite to 2.

FIRST SEMESTER

1 T 6:20 Campus Folwell 113, Shaw
Th 6:20 St. P. Ext. Center 203, Schmidt

SECOND SEMESTER

2 T 6:20 Campus Folwell 113, Shaw
Th 6:20 St. P. Ext. Center 203, Schmidt

6-7-8 The Art of the Twin Cities. 3 credits each semester. \$10.

A comprehensive approach to a basic understanding of the theory and practice of painting, sculpture, architecture, and industrial arts. For illustrative material there will be used as frequently as possible the art works developed or collected in the Twin Cities, particularly those of the University Gallery and the Minneapolis Institute of Arts, giving them a more positive and definite place in daily living. No prereq.

FIRST SEMESTER

W 6:20 Campus Wesbrook 206, Faulkner

SECOND SEMESTER

W 6:20 Campus Wesbrook 206, Faulkner

PARLIAMENTARY LAW**Parliamentary Law.** 3 credits for certificate only. \$10.

A system based on principles (not a mere list of rules) a knowledge of which will supply the answer to innumerable questions that may arise as to procedure in a deliberative assembly. No text required. Open to all.

FIRST SEMESTER

T 8:05 St. P. Ext. Center 208, Hawley
Th 8:05 Campus Law 6, Hawley

SECOND SEMESTER

T 8:05 St. P. Ext. Center 208, Hawley
Th 8:05 Campus Law 6, Hawley

PHILOSOPHY

1 Problems of Philosophy (Introduction). 3 credits. \$10.

Introduction to the problems of philosophy; the main fields of investigation; permanent problems; principal methods and schools of philosophy; historical and contemporary views. No prereq.

FIRST SEMESTER

T 8:05 Campus Folwell 322, Conger
W 6:20 St. P. Ext. Center 203, Everett

2 Logic. 3 credits. \$10.

There is a difference between "straight" and "crooked" thinking. Logic is the study of these differences. What is a fallacy? How may pitfalls beset the attempt to think straight? When is a term properly defined? Why are sound definitions important? What is meant by a "syllogism"? What by a "dilemma"? What do you understand by proof? When is proof of a statement called for? When is it complete? What is a hypothesis? How many of these do you use in an average conversation? What is meant by "scientific thinking"? Do you do any of it? Logic is the *systematic analysis* of these and other related questions. The study of logic will show you what is involved in straight thinking. No prerequisite.

SECOND SEMESTER

Th 6:20 Campus Folwell 205, Castell

3 Principles of Ethics. Offered 1939-40.**70 Modern Philosophies of Social Reform.** 3 credits. \$10.

A survey of ideas of social reform since the Industrial Revolution. Topics dealt with: the argument for democracy, the argument for laissez-faire, the critics of laissez-faire, the argument for revolution, the critics of revolution, and contemporary movements such as communism and fascism. Prereq. for degree, 8 credits in philosophy.

N.B.—Definitely related to the social reorganization content of History 2 (European Civilization, formerly Modern World, second semester.)

FIRST SEMESTER

Th 6:20 Campus Folwell 205, Castell

10 Science and Religion. 3 credits. \$10.

A survey of the chief points of contact and conflict in these interests in contemporary thought. No prerequisite.

SECOND SEMESTER

T 8:05 Campus Folwell 322, Conger

20 Social Philosophy. 3 credits. \$10.

A study of conflicting social philosophies of today; liberalism *versus* authoritarianism; evaluation of various social, political, and economic institutions in terms of ethical ideals; other problems of social morality; social reconstruction; social utopias. No prereq.

SECOND SEMESTER

W 6:20 St. P. Ext. Center 206, Everett

PHYSICS

N.B.—Attention is called to the newly adopted class in General Physics, including laboratory and embracing basic items for background purposes. Students who have completed classes in some of these basic items will find succeeding classes offered for the next year or two, to enable them to finish the sequence. Students beginning now should register for General Physics.

7-8-9† General Physics. 5 credits each semester. All required for credit. \$17.

A general class for students majoring in physics, mathematics, chemistry, and in the Institute of Technology; includes mechanics, sound, heat, light, and electricity. Labora-

tory work an integral part of the classes. Prereq. for degree, higher algebra and trigonometry. Phys. 9 offered 1939-40.

FIRST SEMESTER
7 MW 6:20 Campus Physics 166, Buchta
or assistant

SECOND SEMESTER
8 MW 6:20 Campus Physics 166, Buchta
or assistant

33 Optics. 3 credits. \$10.

Fundamental principles underlying light phenomena. Prereq. for degree, Physics 3 (Mechanics).

FIRST SEMESTER
T 6:20 Campus Physics 166, Culmer

43 Electricity. 3 credits. \$10.

The principles underlying electric and magnetic phenomena. Prereq. for degree, Physics 3 (Mechanics).

SECOND SEMESTER
T 6:20 Campus Physics 166, Culmer

13 Acoustics. Not offered 1938-39.

23 Heat. Not offered 1938-39.

POLITICAL SCIENCE

1† American Government and Politics, Part I. 3 credits. \$10.

Introductory study of the American system of government—national, state, and local. Constitutional basis; units and areas of government and their interrelations; forms of government and their historical development; citizenship and private right; participation in politics; parties and elections. 1 and 2 both required for credit. No prereq.

FIRST SEMESTER
M 6:20 Campus Burton 209, Starr

2† American Government and Politics, Part II. 3 credits. \$10.

A continuation of Pol. Sci. 1. The constitutional position of legislative bodies in the United States; their organization, powers, and procedures; the office of the American executive; administrative organization and problems of administrative reorganization; the civil service; the rôle and functions of the courts; problems of judicial review. No prereq.

SECOND SEMESTER
M 6:20 Campus Burton 209, Christensen

3 Functions of Government (American Government and Politics, Part III.) 3 credits. \$10.

A critical examination of the expansion of the functions of government with emphasis on the changing relations of government to the social and economic order; the constitutional, political, and administrative problems in the relations of government to business, social services and planning, national defense, foreign relations, agriculture, and labor. No prereq.

SECOND SEMESTER
T 6:20 Campus Burton 209, Kirkpatrick

15 Elements of Political Science. Not offered 1938-39.

25 World Politics. 3 credits. \$10.

A study of the principal international problems of Europe and Asia, both post-war and to a lesser extent pre-war; for example, armaments and alliances, nationalism and imperialism. Prereq., Pol. Sci. 1.

FIRST SEMESTER
Th 6:20 Campus Burton 209, Mills

61 *Development of the American Constitution.* Not offered 1938-39.

63 **American Constitutional Development since 1876.** 3 credits. \$10.

The development of the constitutional system with emphasis on the relation of social, economic, and political problems of modern government to the system. Prereq. for degree. 9 credits in pol. sci., or Hist. 7-8-9, or consent of the instructor.

FIRST SEMESTER

T 6:20 Campus Burton 209, Kirkpatrick

65 *State and Local Government in Minnesota.* Not offered 1938-39.

71 **Recent Social Legislation.** 3 credits. \$10.

A survey of government activity in the field of social welfare; the theory and underlying principles of welfare legislation; the development of social insurance plans abroad and in the United States; constitutional and administrative problems of welfare and social security legislation; a survey of the social security act, state law adopted pursuant thereto. Prereq. for degree, 9 credits in pol. sci. or consent of instructor.

FIRST SEMESTER

W 6:20 Campus Burton 209, Christensen

144 **American Political Parties.** 3 credits. \$10.

The policies, composition, organization, activities, and functions of the political parties of today; suffrage, elections, and related subjects; evaluation of the party as a force in American government. Prereq. for degree, see instructor.

SECOND SEMESTER

W 6:20 Campus Burton 209, Starr

148 *European Dictatorships.* Not offered 1938-39.

198 **Imperialism.** 3 credits. \$10.

The motives and forms of government of existing colonial empires; colonial policies; native nationalism in the Philippines and other empires; relation between colonial expansion and world peace. Prereq. for degree, see instructor.

SECOND SEMESTER

Th 6:20 Campus Burton 209, Mills

PREVENTIVE MEDICINE AND PUBLIC HEALTH

(See Education Classes, page 48)

PSYCHOLOGY

1-2 **General Psychology.** 3 credits each semester. Both required for credit, except for certain extension certificates. \$10.

A general introduction to the study of human behavior with emphasis on the development of the individual.

FIRST SEMESTER

1 M 6:20 Campus Folwell 301, White
 T 6:20 St. P. Pub. Lib. Aud., White
 W 4:20 Campus Folwell 110, White
 W 8:05 Campus Folwell 110, White
 Th 6:20 Campus Folwell 109, White

SECOND SEMESTER

2 M 6:20 Campus Folwell 110, White
 T 6:20 St. P. Pub. Lib. Aud., White
 W 4:20 Campus Folwell 109, White
 Th 6:20 Campus Folwell 109, White

3 Psychology Applied to Daily Life. 3 credits. \$10.

A course in the uses of psychological methods in solving such problems as come up in the treatment of ill health, in the courtroom, in business offices and factories, in advertising, in education, in social and political life, in artistic creation and esthetic enjoyment.

FIRST SEMESTER
F 6:20 Campus Folwell 109, White

SECOND SEMESTER
T 6:20 St. P. Ext. Center 206, Longstaff
W 8:05 Campus Folwell 109, White

56 Psychology of Advertising. 3 credits. \$10.

Analysis of advertising, national and local, from the standpoint of attention, memory, desire, and action; experimental techniques for investigating advertising problems. Of fundamental value to all advertisers. Prereq., 1-2, and Principles of Economics.

FIRST SEMESTER
T 6:20 Campus Psychology 115, Longstaff

How To Study. See page 27.

N.B.—See also How To Study Institute, page 3.

144-145† Abnormal Psychology. 3 credits each semester. \$10. Both required for credit.

Normal and abnormal behavior contrasted; varieties of maladjustment as illustrated in criminality, deficiency, fanaticism, and insanity; the inadequacies of personality as shown in everyday life. Prerequisites arranged.

FIRST SEMESTER
144 M 8:05 Campus Psychology 115,
Harris

SECOND SEMESTER
145 M 8:05 Campus Psychology 115,
Harris

RADIO SCRIPT WRITING

(See *Business Classes*, page 55)

ROMANCE LANGUAGES*French***1-2† Beginning French.** 3 credits each semester. \$10.

Grammar, pronunciation, reading, and practice in speaking. No prereq. Both required for credit.

FIRST SEMESTER
1 T 6:20 St. P. Ext. Center 201, Jordan
W 6:20 Campus Folwell 227, Clefthon

SECOND SEMESTER
2 T 6:20 St. P. Ext. Center 201, Jordan
W 6:20 Campus Folwell 227, Clefthon

3-4 Intermediate French. 3 credits each semester. \$10.

Grammar, review, composition, readings from modern authors. Prereq., 1-2, or 2 years of preparatory French.

FIRST SEMESTER
3 T 6:20 Campus Folwell 227, Brackney

SECOND SEMESTER
4 T 6:20 Campus Folwell 227, Brackney

30a-b French Commercial Correspondence and Commercial Practice. 3 credits each semester. \$10.

Writing of business and other letters; bills, orders; reading of commercial documents; study of French commercial institutions; export and import procedure. Prereq. for degree, French 4.

FIRST SEMESTER
30a M 6:20 Campus Folwell 203, Minault

SECOND SEMESTER
30b M 6:20 Campus Folwell 203, Minault

60-61 Seventeenth Century French Readings. 3 credits each semester. \$10.

Selections from standard writings. May be elected in two successive years without duplication of material. Prereq. for degree, French 4.

FIRST SEMESTER			SECOND SEMESTER		
60	T 6:20	Campus Folwell 202, Guinotte	61	T 6:20	Campus Folwell 202, Guinotte

*Spanish***1-2† Beginning Spanish.** 3 credits each semester. \$10.

Grammar, pronunciation, reading, and practice in speaking. No prereq. Both required for credit.

FIRST SEMESTER			SECOND SEMESTER		
1	M 6:20	Campus Folwell 102, Grismer	2	M 6:20	Campus Folwell 102, Grismer
	T 6:20	St. P. Ext. Center 203, Carranza		T 6:20	St. P. Ext. Center 208, Carranza

3-4 Intermediate Spanish. 3 credits each semester. \$10.

Review, composition, readings from modern authors. Attention to correspondence and commercial practice if desired. Prereq., 1-2, or 2 years of preparatory Spanish.

FIRST SEMESTER			SECOND SEMESTER		
3	T 6:20	Campus Folwell 201, Pattison	4	M 6:20	Campus Folwell 201, Pattison

20a-b. Spanish Composition I-II. 3 credits each semester. \$10.

Practical composition, including correspondence. Prereq., 3-4.

FIRST SEMESTER			SECOND SEMESTER		
20a	T 6:20	Campus Folwell 209, Grismer	20b	T 6:20	Campus Folwell 209, Grismer

RUSSIAN**Elementary Russian.** No credit. \$10.

Elements of the language, with particular emphasis on an ability to read, particularly for science students who wish to read articles not available, except in brief abstracts, in translation. No prereq.

Students who began in this class in the second semester 1937-38, may continue in the coming second semester, or may review in the first semester, as they wish.

FIRST SEMESTER			SECOND SEMESTER		
M	7:30	Campus Chem. 325, Munro	M	7:30	Campus Chem. 325, Munro

SCANDINAVIAN*Norwegian***1-2 Beginning Norwegian.** 3 credits each semester. \$10.

Elements of grammar; conversation, simple composition; select readings of easy prose and poetry; a simple Björnson classic in second semester. No prereq.

FIRST SEMESTER			SECOND SEMESTER		
1	Th 6:20	Campus Folwell 206, Madsen	2	Th 6:20	Campus Folwell 206, Madsen

51-52 Modern Norwegian Literature. 3 credits each semester. \$10.

Brief discussion of early Norwegian literature and the background constituted by the medieval Danish-Norwegian literature previous to 1814; the most prominent authors from 1814 to 1905: Wergeland, Welhaven, Björnson, Ibsen, Lie, Kielland. Lectures, class readings, discussions, reports. Prereq., reading knowledge of Norwegian or Danish.

FIRST SEMESTER			SECOND SEMESTER		
51	Th 8:05	Campus Folwell 206, Madsen	52	Th 8:05	Campus Folwell 206, Madsen

*Swedish***7-8 Beginning Swedish.** 3 credits each semester. \$10.

Grammar, composition, conversation, reading of selected prose. No prereq.

FIRST SEMESTER

7 W 6:20 Campus Folwell 206, Stomberg

SECOND SEMESTER

8 W 6:20 Campus Folwell 206, Stomberg

12 Ancient and Medieval Scandinavian History. 2 credits. \$7.

Political and economic history of Norway, Sweden, and Denmark to 1521. Prereq., Scand. 4-5, or 10-11, or Hist. 1-2. (Knowledge of Scandinavian language not required.)

FIRST SEMESTER

T 6:20 Campus Folwell 206, Stomberg

104 Modern Scandinavian History. 2 credits. \$7.

Development of the three Scandinavian countries from 1521 to the present. Prereq., Scand. 10-11-12, or 4-5, or 15 cred. in hist. (Knowledge of Scandinavian language not required.)

SECOND SEMESTER

T 6:20 Campus Folwell 206, Stomberg

SOCIOLOGY AND SOCIAL WORK*1 Classes in Sociology; prerequisite to technical social work classes.***1 Introduction to Sociology.** 3 credits. \$10.

A study of the culture of human society and effect upon it of such influences as location, sex, race, custom, invention; culture patterns, processes, and social interactions; social change and means of control. No prereq.

FIRST SEMESTER

T 6:20 Campus Jones 109, Monachesi

SECOND SEMESTER

T 6:20 Campus Jones 104, Monachesi

T 8:05 St. P. Ext. Center 203, Schneider

Th 6:20 Campus Jones 109, Schneider

6 Social Interaction. 3 credits. \$10.

The basis and forms of social interaction and social relationships with detailed attention to some of the fundamental behavior patterns of contemporary society. Prereq., Soc. 1.

SECOND SEMESTER

M 6:20 Campus Jones 109, Kirkpatrick

T 8:05 St. P. Ext. Center 204, Hoffman

14 Rural Sociology. 3 credits. \$10.

A study of rural and urban relationships; the principles of sociology applied to the position of an agricultural class in an industrial society; the contributions and obligations of farmers to the larger society, and vice versa. Prereq., Soc. 1.

FIRST SEMESTER

M 6:20 Campus Folwell 3, Lundquist

SECOND SEMESTER

W 6:20 St. P. Pub. Lib. 5, Lundquist

49 Social Pathology. 3 credits. \$10.

A survey course in contemporary social problems with especial emphasis on the conditions and processes in personal demoralization and social disorganization. The scientific approach to the study of poverty, physical diseases and defectiveness, feeble-mindedness, insanity, vagrancy, etc. Prereq. for degree, 10 cred. in soc.

FIRST SEMESTER

W 6:20 Campus Jones 109, Sletto

53 Elements of Criminology. 3 credits. \$10.

Causes and social control of crime; treatment from the point of view of processes of social interaction. Prereq., 10 cred. in soc.

SECOND SEMESTER

T 6:20 Campus Jones 109, Vold

60 Social Protection of the Child. 3 credits. \$10.

Social obligations to the child; development of the child-saving movement in the United States; infant and child mortality, recreation, education; courts, institutions, societies, and other public efforts for the child. Prereq., 13 cred. in soc.

FIRST SEMESTER

T 8:05 Campus Jones 2, Quinlan

64 Human Behavior Mechanisms. 3 credits. \$10.

A discussion of normal and abnormal behavior emphasizing the latter, especially its relation to problems met by the social worker. Application of psychoanalysis in understanding abnormal behavior. Prereq., 13 cred. in soc. and 6 cred. in psy.

FIRST SEMESTER

M 6:20 St. P. Wilder Disp., Lippman

*96 Recent Social Trends. Not offered 1938-39.***110 Rural Organization.** 3 credits. \$10.

Social organization as it affects living conditions in small towns and rural districts. Especially designed for rural as well as other social workers and specialists in rural sociology or agricultural economics. Prereq., same as for 119, below.

FIRST SEMESTER

W 6:20 St. P. Pub. Lib. 5, Lundquist

SECOND SEMESTER

M 6:20 Campus Folwell 3, Lundquist

119 The Family. 3 credits. \$10.

The evolution of the family; development of family unity or disunity; the rôles of the several members of the family; methods of investigation of the family. Prereq., 4 courses in soc., or Soc. 1 and 15 cred. in soc. sci., ed., phil., or psy.

FIRST SEMESTER

W 8:05 Campus Jones 109, Kirkpatrick

120 Cultural Change. 3 credits. \$10.

Theories of cultural change; the conditions and direction of change; the problem of cultural stability. Prereq., 4 courses in soc., or Soc. 1 and 15 credits in soc. sci., ed., phil., or psy.

SECOND SEMESTER

Th 6:20 Campus Jones 109, Schneider

II Classes in Social Work.

N.B.—These classes are open to persons employed in social work positions who are recommended by the executive of the agency in which they are employed and approved by an adviser in the University Training Course for Social and Civic Work. In satisfaction of requirements for membership in professional social work organizations, the courses listed are accounted as "technical social work" courses. Unless prerequisites are otherwise stated the student should have completed at least 13 credits in sociology.

65 Psychiatric Aspects of Social Case Work. 3 credits. \$10.

A detailed discussion of cases that have been under intensive treatment; analysis of methods and philosophy of treatment. Limited to twenty students. Prereq., Soc. 64.

SECOND SEMESTER

M 6:20 St. P. Wilder Disp., Lippman

84-85† Principles of Case Work. 3 credits each semester. \$10. Both required for credit.

Social case work practices as applied to selected problems.

	FIRST SEMESTER		SECOND SEMESTER
84	Th 6:20 Campus Jones 2, Brocker	85	Th 6:20 Campus Jones 2, Brocker

125 Principles of Group Work. *Not offered 1938-39.*

126 Problems of Supervision in Group Work. 3 credits. \$10.

Methods of the supervision of groups and group leaders with special emphasis on the use of conference, both group and individual, group records and observation, and the means of evaluating leadership techniques. (Open only to people with experience in group work agencies.)

SECOND SEMESTER
Th 8:05 Campus Jones 2, Phillips

94 Supervision in Social Case Work. 3 credits. \$10.

Principles and methods in the supervision of social case work practice.

SECOND SEMESTER
T 6:20 Campus Jones 2, Quinlan

127 Legal Aspects of Social Work. 3 credits. \$10.

A selected group of legal problems treated from the viewpoint of the social worker; the court system; legal process; protection and enforcement of the legal rights of indigent persons; problems of the small wage earner—garnishment, small loans, eviction; problems in domestic relations. Not designed to teach technical law, but to furnish a background for understanding social problems having legal implications.

FIRST SEMESTER
T 6:20 Campus Folwell 109, Finke

SPEECH (PUBLIC SPEAKING)

1-2-3 Fundamentals of Speech. 3 credits each semester. All required for credit. \$10.

Speech as a means of social adaptation and control; techniques of body and voice; organization of speech material, and study of types of speeches; practice for correctness and effectiveness in presentation. Voice recordings may be arranged through the instructor for a small fee. Prereq., Eng. Comp. 4-5-6, or exemption.

FIRST SEMESTER			SECOND SEMESTER		
1	M 6:20	St. P. Ext. Center 208, Knower	1	M 8:05	Campus Folwell 308, Fulton
	M 8:05	Campus Folwell 308, Gilkinson		M 8:05	St. P. Ext. Center 208, Knower
	T 6:20	Mpls. N. W. Bank Bldg. 603, Fulton	2	M 6:20	St. P. Ext. Center 208, Knower
	W 6:20	Campus Folwell 305, Hurd		T 6:20	Mpls. N. W. Bank Bldg. 603, Fulton
2	M 8:05	St. P. Ext. Center 208, Knower		W 6:20	Campus Folwell 305, Hurd
	W 8:05	Campus Folwell 308, Gilkinson	3	M 6:20	St. P. Ext. Center 208, Knower
3	M 8:05	St. P. Ext. Center 208, Knower		T 6:20	Mpls. N. W. Bank Bldg. 603, Fulton
	W 8:05	Campus Folwell 308, Gilkinson		W 6:20	Campus Folwell 305, Hurd

Practical Speech Making I, II. No credit. \$10.

Designed for business and professional people, dealing with practical speech making in everyday life, helping the student to organize his ideas so that they may be expressed with confidence and effectiveness; individual attention to cases of nervousness or embarrassment. Each student speaks before the class each meeting. Beginning classes each

semester; students may continue for two semesters, with new types and problems of speech in each without duplication. Open to all.

FIRST SEMESTER				SECOND SEMESTER			
I	M	6:20	Campus Folwell 5, Fulton	I	W	6:20	Campus Folwell 5, Fulton
	W	6:20	Campus Folwell 5, Fulton	II	M	6:20	Campus Folwell 5, Fulton
	Th	8:05	St. P. Ext. Center 206, Fulton		Th	8:05	St. P. Ext. Center 206, Fulton
II	M	8:05	Campus Folwell 5, Fulton				

Speech and Personality. No credit. \$5.

The theory of effective speaking as exemplified in Practical Speech Making. Unsatisfactory adjustments in special situations, social or business; difficulties in the use of body and voice; organizing and developing speech materials; persuasive techniques of the speaker. Lectures, with opportunity for class discussion. Answers the question "How can I develop the confidence needed for effective speaking?" Repeated second semester.

FIRST SEMESTER				SECOND SEMESTER			
W	8:05	Campus Folwell 301, Fulton		W	8:05	Campus Folwell 301, Fulton	

Group Discussion. No credit. \$10.

For business and professional people who desire a better understanding of methods of reasoning, steps in analysis, and technique of persuasion. Emphasizes extemporaneous discussion of controversial questions. Each class member participates in every discussion. Prereq., one class in Speech.

FIRST SEMESTER			
F	8:05	Campus Folwell 5, Fulton	

51-52 Advanced Public Speaking I-II. 3 credits each semester. \$10.

Speeches on public questions; analysis and outlining; methods of reasoning; adaptation of material to audience. Conducted on discussion plan with free, extemporaneous rebuttal to speeches. Prereq., Speech 1-2-3.

FIRST SEMESTER				SECOND SEMESTER			
51	W	8:05	Campus Folwell 305, Rarig	52	W	8:05	Campus Folwell 305, Rarig

65 Radio Speech. 3 credits. Repeated second semester. \$10.

Speech art and psychology of the radio; announcing and broadcasting; radio speech; radio drama; interpretative reading, voice, diction, articulation, and pronunciation. Practice, exercises, projects, and reports on problems of appeal and audience response. Prereq., Speech 1-2-3.

FIRST SEMESTER				SECOND SEMESTER			
Th	6:20	Campus Folwell 308, Ziebarth		Th	6:20	Campus Folwell 308, Ziebarth	

Speech Hygiene I-II. No credit. \$10.

A study of: behavior as indicated through speech; why and how a man talks; basic elements in the development of unsocial and inadequate emotional patterns; speech symptoms evaluated from cause and effect relations; psychologic and social factors in speech, analysis of individual problems of self-consciousness, stage fright, and general ineffective conversational speech; speech as a means of self and social control in daily living. Prereq., consult instructor.

FIRST SEMESTER				SECOND SEMESTER			
I	T	6:20	Campus Folwell 308, Bryngelson	I	T	8:05	Campus Folwell 308, Bryngelson
				II	T	6:20	Campus Folwell 308, Bryngelson

Speech Hygiene III. No credit. \$10.

A special class extending the subject for students who have completed Speech Hygiene I-II, hence open only to them, or to others approved by the instructor.

N.B.—Enrolment of 25 required for this class.

FIRST SEMESTER			
T	8:05	Campus Folwell 308, Bryngelson	

Vocabulary Building I. No credit. Meets weekly for one hour. \$5, plus \$1 materials fee.

A practical course designed to increase students' speaking and reading vocabularies; presentation and discussion of words; exercises, reading lists. Mimeographed matter, in lieu of text, issued each meeting. Home study suggested but not required. Not a recitation course. No prereq.

FIRST SEMESTER
 M 6:00 Campus Folwell 322, Thorvilson
 7:00 Campus Folwell 322, Thorvilson
 W 6:00 St. P. Ext. Center 204, Thorvilson
 7:00 St. P. Ext. Center 204, Thorvilson

SECOND SEMESTER
 M 6:00 Campus Folwell 322, Thorvilson
 W 7:00 St. P. Ext. Center 204, Thorvilson

Vocabulary Building II. No credit. Meets weekly for one hour. \$5, plus \$1 materials fee.

A more advanced and detailed study of words. Includes written composition, exercises, reports, tests; not a recitation class; home study recommended. May be taken as a continuation of Course I, or together with it.

SECOND SEMESTER
 M 7:00 Campus Folwell 322, Thorvilson
 W 6:00 St. P. Ext. Center 204, Thorvilson

31-32-33† Introduction to the Theater. 3 credits each semester. \$10, plus \$1 laboratory fee each semester. All required for credit.

The theater today; (1) the different activities carried on in the theater; (2) pantomime; (3) construction and painting of scenery. Prereq., Speech 1-2-3 (or 4-5) or concurrent registration.

N.B.—Students may register for either 31, 32, or 33, either semester.

FIRST SEMESTER
 Th 6:20 Campus Music 19, Lees

SECOND SEMESTER
 Th 6:20 Campus Music 19, Lees

77-78-79† Acting. 3 credits each semester. \$10, plus \$1 laboratory fee each semester. All required for credit.

The arts of pantomime, voice, and characterization, with exercises in one-act plays and projects of the University Theatre. Prereq., Speech 1-2-3.

N.B.—Students may register for either 77, 78, or 79 either semester.

FIRST SEMESTER
 Th 8:05 Campus Music 19, Lees

SECOND SEMESTER
 Th 8:05 Campus Music 19, Lees

STAMP COLLECTING (PHILATELY)

Stamp Collecting. Not offered 1938-39.

SWIMMING

(See Physical Education Classes, page 46)

TEXTILES

(See Business Classes, page 60)

ZOOLOGY

1-2ex† General Zoology. 5 credits each semester. \$17. Both required for credit.

Structure, physiology, embryology, classification, genetics, and evolution of animals. Equivalent to 1-2-3 in day class. No prereq.

FIRST SEMESTER
1 MW 6:20 Campus Zoology 211,
Wodsedalek

SECOND SEMESTER
2 MW 6:20 Campus Zoology 211,
Wodsedalek

21 Histology. 5 credits. \$17.

The structure of the cell, tissues, and organs; special emphasis on blood-forming organs and blood structure. Prereq., Zool. 1-2-3 or equiv. (One lecture, two hours laboratory, two meetings each week.)

FIRST SEMESTER
MW 6:20 Campus Zool. 201

Birds of Minnesota. No credit for degree. \$10.

A laboratory and field class in identifying and enjoying the birds of this region. Early meetings will make use of collections of the Museum of Natural History, but as soon as weather permits the class will meet in field locations. Study will be based on the manual of Dr. T. S. Roberts, who will be responsible for the class. Open to all.

SECOND SEMESTER
T 8:05 Campus Zool. 204, Roberts and others

22 Comparative Anatomy. 5 credits. \$17.

A comparative study of the organs and systems of the vertebrates. Lectures and laboratory. Prereq., Zool. 1-2-3 or Zool. 1-2ex.

FIRST SEMESTER
TTh 6:20 Campus Zool. 211, Eddy

83 Genetics and Eugenics. 3 credits. \$10.

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. Lectures. Prereq., Zool. 1-2-3 (or 1-2 in extension).

FIRST SEMESTER
T 6:20 Campus Zoology 201, Oliver

82 Evolution. 3 credits. \$10.

History of the evolution of the living organisms; evidences for the theory of organic evolution; causal factors and the importance of environment in modification of body form. Lectures. Prereq., Zool. 1-2-3, or Botany 1, 7, 21.

SECOND SEMESTER
T 6:20 Campus Zoology 211, Oliver

EDUCATION CLASSES

Classes offered under this head are primarily for teachers in service who are unable to attend regular day classes or late afternoon or Saturday morning classes on the University campus. Only those classes have been listed that are primarily for credit in the College of Education. Many other classes are offered, especially in the academic classes of the College of Science, Literature, and the Arts, which are accepted for credit toward a degree in the College of Education. All classes are open to students (other than teachers) who may have an interest in any phase of formal education and its methods of instruction and supervision.

N.B.—Classes in Education, unless otherwise stated, carry credit only in the College of Education. They may, however, be acceptable toward General Extension Division certificates when properly approved.

CANDIDATES FOR DEGREE

Credit in the College of Education is dependent upon the qualifications of the student who must have completed the two years' work required for admission to the College of Education. This work may be completed either by graduation from a teachers college or normal school, a two-year course in the Junior College of the University or any accredited college, or in extension classes.

Students expecting to qualify for a degree should secure a copy of the College of Education Bulletin, which contains a statement of general requirements for graduation, of required courses in majors and minors, and of the specialized curricula, and should consult a major adviser as early in their course as possible. Failure to do so often delays graduation and makes extra work necessary.

The Students' Work Committee of the General Extension Division will be glad to assist students by explaining the various curricula and printed requirements for each; by advising what credits may be secured through extension classes; by assisting in securing the necessary official advice from the proper persons in the College of Education.

Students should study the requirements for Qualifying Examinations. Active teachers who have been enrolled for courses toward a degree previous to September 1, 1933, may possibly be excused from them. This is done by petition only as the result of a conference with Dr. C. W. Boardman, 218 Burton Hall.

Extension classes are open to registration by any person qualified by maturity and ability to profit by the study. In practically all cases only those who expect to qualify for a university degree will be expected to meet the requirements of prerequisites. **PREREQUISITIES ARE STATED FOR INFORMATION, NOT AS OBSTACLES.**

ADMINISTRATION AND SUPERVISION

Classes formerly listed under this heading are now included under Curriculum and Instruction.

GENERAL EDUCATION

51A (61A) Introduction to Teaching—Psychological Foundations. 3 credits. \$10.

A survey of the fundamental facts of human behavior involved in educational activities. Course 51 for secondary school teaching, 61 for elementary. Not open to students who have credit for Ed. Psy. 55, which it replaces. Prereq., 6 credits in psychology.

N.B.—Credit in this course will be granted only when the student has completed Ed. 51B and Ed. 51C (or Ed. 61B and Ed. 61C) and passed the Qualifying Examination in Education. (See Bulletin of the College of Education.)

	SECOND SEMESTER
M 4:00	St. P. Ext. Center 201, von Borgersrode
W 4:00	Campus Vincent 115, von Borgersrode

ART EDUCATION

1 Fundamental Experiences in Design. 3 credits. \$10.

The fundamental principles applied to a series of interesting and practical problems using a variety of techniques; a basic course that is useful in other fields of art and of value in advertising. No prereq.

FIRST SEMESTER

M 8:05 Campus Jones 203, Lewis

3 Interior Decorating (Experiences in Design 3). 3 credits. \$10, plus laboratory fee \$.50.

Design principles in relation to the home; identification of period furniture; wall treatment; floor coverings; furniture arrangement; color schemes; modern style window treatment; field trips to the Minneapolis Institute of Arts and to furniture stores. No prereq.

	FIRST SEMESTER		SECOND SEMESTER
M 6:20	Campus Jones 207B, Lewis	M 6:20	Campus Jones 207B, Lewis
T 7:00	Campus Jones 207B, Lewis		
W 8:05	St. P. Ext. Center 208, Lewis		

22 Advanced Interior Decorating (Second Year Design). 3 credits. \$10, plus laboratory fee \$.50.

Continuation of Interior Decorating 3, emphasizing color theories in relation to room color schemes, floor coverings, draperies, etc.; classification and use of fabrics, period and present day; decorative arts; room interiors appropriate to types of furniture. Prereq., 3.

	SECOND SEMESTER
T 7:00	Campus Jones 207B, Lewis
W 6:20	St. P. Ext. Center 208, Lewis

Special Interior Decorating Classes. No credit

Interior Decorating I. No credit. 10 weeks. \$5. Begins September 28, and February 8.

A lecture course of special interest to homemakers offered at a convenient time. Same emphasis as in credit course. Optional field trips.

	FIRST SEMESTER		SECOND SEMESTER
W 2:00 to 3:30	Mpls. Pub. Lib., Lewis	W 2:00 to 3:30	Mpls. Pub. Lib., Lewis

4-6-8 Still Life and Pose (Experiences from). 3 credits each semester. \$10, model fee \$1, payable to instructor.

Replaces classes formerly listed as Sketch and Still Life. Students may complete work corresponding to old numbers 4-5-6-7-8-9, which carried 1 credit each, and may register for any three in any semester. Drawing from objects and posed figures; emphasis on form, value relations, perspective and composition. Various media. No prereq.

FIRST SEMESTER
T 4:20 Campus Jones 203, Lewis

SECOND SEMESTER
T 4:20 Campus Jones 203, Lewis

Orientation in Simple Handicrafts. 3 credits each semester. \$10.

Experience in simple handicrafts selected with reference to their recreational value, for those interested in camps, playgrounds, clubs, and adult education. First semester: pottery (hand building), metal and simple jewelry, bookbinding and portfolio making, basketry; second semester: pottery (pouring and wheel building), weaving (hand), wood-block and linoleum printing, stenciling (fabrics and paper), crayonnex, batik, wood-carving, leather tooling, and pressing and dyeing. Students may enter either semester. No prereq.

FIRST SEMESTER
W 6:20 Campus Jones 10, Ross

SECOND SEMESTER
W 6:20 Campus Jones 10, Ross

61-62-63 Portraiture. 3 credits each semester. \$10, model fee \$1, payable to instructor.

Work in all media for both beginning and advanced students. Aim: to show the relationship between plastic form and character. Meets for three hours weekly.

FIRST SEMESTER
Th 7:00 Campus Main Eng. 417, Torbert

SECOND SEMESTER
Th 7:00 Campus Main Eng. 417, Torbert

Art Metal Work. 3 credits one semester. \$10.

Designed for teachers of handicrafts and others interested in them. First semester: soft soldering; wooden hammer making; working on mild steel, copper, brass, pewter, and aluminum; making trays, plates, bowls, candlesticks, etc.; wax and lacquer finishes. Second semester: silver soldering; use of jewelers' saw in pierced work; etching; coloring; copper and silver spoons; problems in pewter, brass, and copper (sugar and creamer, desk sets, door knocker, lantern, etc.). Students may register for either semester. No prereq.

FIRST SEMESTER
T 6:20 Univ. Farm, Ag. Eng. 106, 20, Dent

SECOND SEMESTER
T 6:20 Univ. Farm, Ag. Eng. 106, 20, Dent

CURRICULUM AND INSTRUCTION

Ed.C.I. 119 Elementary School Curriculum. 3 credits. \$10.

The principles underlying the selection and organization of subject-matter for courses in the elementary schools; critical examination of current practices. Prereq., senior standing.

FIRST SEMESTER
W 4:00 Campus Vincent 113,
von Borgersrode

Ed.C.I. 145 Remedial Reading. 3 credits. \$10.

A survey of the recent trends in remedial reading, with special emphasis upon the practical remedial methods useful in classroom instruction in the elementary and junior high schools. Prereq., Ed.C.I. 143, 144, or 159.

FIRST SEMESTER
W 5:00 St. P. Central High School, Bond

Ed.C.I. 150 Supervision and Improvement of Instruction. 3 credits. \$10.

Analysis of the functions and duties of the supervisor as related to the improvement of instruction; specific supervisory technique; objective analysis of classroom activity; concrete applications to present-day problems; case studies. Prereq., senior standing.

FIRST SEMESTER

M 4:00 St. P. Ext. Center 201,
von Borgersrode

T 4:00 Mpls. N. W. Bank Bldg. 603,
von Borgersrode

EDUCATIONAL PSYCHOLOGY

For General Psychology, see S.L.A. Classes, page 33.

For Child Psychology, see S.L.A. Classes, page 19.

55 Elementary Educational Psychology.

Now taught as Ed. 51A for secondary school curricula and Ed. 61A for elementary. See General Education, page 43.

60 Introduction to Statistical Methods. 3 credits. \$10.

Statistical methods applied to educational investigation; measures of central tendency, variability and correlation; for classroom teachers and principals primarily. Higher mathematics not required altho it will be of assistance. Prereq., 6 cred. in psychology.

SECOND SEMESTER

T 4:00 Mpls. N. W. Bank Bldg. 603,
von Borgersrode

120 Basic Principles of Measurement. 3 credits. \$10.

Principles applied to the construction and use of tests and to the interpretation and evaluation of scores. Illustrations from mental and other aptitude tests, education, personality, and character tests. Prereq., Ed. 51A or equivalent.

SECOND SEMESTER

Th 5:00 Mpls. N. W. Bank Bldg. 603,
Van Wagenen

140 Construction and Use of Educational Tests and Examinations. 3 credits. \$10.

A study of tests for elementary and secondary school pupils. Each student will have opportunity to construct examinations and evaluate published tests in the field of his major interest. Prereq., Ed. Psy. 120 or equivalent. (Replaces Ed. Psy. 111, Educational Measurements.)

FIRST SEMESTER

Th 5:00 Mpls. N. W. Bank Bldg. 603,
Van Wagenen

SECOND SEMESTER

M 5:00 St. P. Ext. Center 201,
Van Wagenen

141. Construction and Use of Group Aptitude Tests. 3 credits. \$10.

A study of group aptitude tests for all school levels with special emphasis on reliability and validity as instruments for educational and vocational guidance. Prereq., Ed. Psy. 120 or equivalent. (Replaces Ed. Psy. 134, Mental Tests.)

FIRST SEMESTER

M 5:00 St. P. Ext. Center 203,
Van Wagenen

HOME ECONOMICS

Interior Decorating. See Art Education, page 43.

Textiles. See Business Classes, page 60.

NURSING EDUCATION

60 Ward Administration. Open to graduate nurses. 3 credits. \$10.

Principles of administration, their application to ward management; opportunities for clinical teaching through efficient ward administration.

FIRST SEMESTER

M 8:05 Campus Med. Sci. 113, Hodgkins

62 Methods of Rating Nursing Efficiency. 2 credits. 11 weeks, \$7.

Personality traits measured by tests and those measured by rating judgments; types of errors in ratings. Open to seniors, graduates. Prereq., permission of instructor.

FIRST SEMESTER

T 8:05 Campus Med. Sci. 113, Darley

69 Survey of Conditions and Trends in Nursing. 3 credits. \$10.

Survey and discussion of problems and trends in various nursing fields.

FIRST SEMESTER

T 8:05 Campus Millard 201, Densford

70ex Principles of Teaching and Supervision in Schools of Nursing. Open to graduate nurses. 3 credits. \$10.

Conditions favoring best preparation of the student nurse; sources, selection, and organization of subject-matter; evaluation of nursing; principles and practices, and teaching methods; content and methods of clinical teaching.

SECOND SEMESTER

T 8:05 Campus Med. Sci. 113, Petry

71 Curriculum Making in Schools of Nursing. 3 credits. \$10.

General principles of curriculum making; study of the functions of the graduate nurse in the community as determinants of the clinical and classroom curriculum of the professional school; integration of materials into curricula preparing nurses as community health agents. No prereq.

SECOND SEMESTER

M 6:20 Campus Med. Sci. 113, Petry

Public Health Nursing. See page 49.

PHYSICAL EDUCATION

Classes for Women

At University Farm Campus (St. Paul)

Swimming—for Women. No credit. One hour, weekly. \$5.

Instruction for beginners, intermediates, and advanced swimmers; water emergency tests, strokes; diving and lifesaving. Department furnishes regulation suits. Health examination at first meeting.

FIRST SEMESTER

T 7:30 Univ. Farm Gym., Eibner
Th 6:30 Univ. Farm Gym., Eibner

SECOND SEMESTER

T 7:30 Univ. Farm Gym., Eibner
Th 6:30 Univ. Farm Gym., Eibner

Recreational Gymnastics and Plunge—for Women. No credit. One hour, weekly. \$5.

Instruction and practice in body-building and posture exercises for 30 minutes, followed by 15-minute swim.

FIRST SEMESTER		SECOND SEMESTER	
T 6:30	Univ. Farm Gym., Eibner	T 6:30	Univ. Farm Gym., Eibner
F 10:00 a.m.	Univ. Farm Gym., Eibner	F 10:00 a.m.	Univ. Farm Gym., Eibner

Classes on Campus

Beginning Swimming—for Women. No credit. One hour, weekly. \$5.

Class and individual instruction. A health examination will be given at the first class meeting. A fee of 50 cents is charged for this examination. University furnishes regulation suit and towel for a fee of 10 cents.

FIRST SEMESTER		SECOND SEMESTER	
M 7:30	Campus Women's Gym. 51, Starr	M 7:30	Campus Women's Gym. 51, Starr
W 6:30	Campus Women's Gym. 51, Starr	W 6:30	Campus Women's Gym. 51, Starr

Elementary Golf—for Women. No credit. One hour, weekly. \$5.

Class and individual instruction in the use of the brassie, midiron, mashie, and putter. Discussion of rules, golf etiquette, and terminology. Classes limited to 25. Equipment (clubs and soft balls) furnished by the members of the class.

SECOND SEMESTER	
W 6:30	Campus Women's Gym. 60, Heiberg
W 7:30	Campus Women's Gym. 60, Heiberg

Intermediate and Advanced Swimming—for Women. No credit. One hour, weekly. \$5.

This is a class for those who know something about swimming and wish to increase their skill in strokes and diving. Instruction is given in the crawl, back crawl, side and breast strokes; elementary and advanced diving. Class and individual instruction. A health examination will be given at the first class meeting. A fee of 50 cents is charged for this examination. University furnishes regulation suit and towel for a fee of 10 cents.

FIRST SEMESTER		SECOND SEMESTER	
M 6:30	Campus Women's Gym. 58, Starr	M 6:30	Campus Women's Gym. 58, Starr
W 7:30	Campus Women's Gym. 58, Starr	W 7:30	Campus Women's Gym. 58, Starr

Intermediate Golf—for Women. No credit. One hour, weekly. \$5.

First ten weeks: class and individual instruction in the use of the brassie, midiron, mashie, and putter; next seven weeks: supervised play at the University golf course. Students furnish own clubs. Class limited to 25. Prereq., some knowledge and experience in golf.

SECOND SEMESTER	
M 6:30	Campus Women's Gym. 60, Snell
M 7:30	Campus Women's Gym. 60, Snell

Badminton and Archery—for Women. No credit. One hour, weekly. \$5, plus \$1 laboratory fee.

Experience and training in the fundamental skills and knowledge necessary to enjoyment of these activities.

FIRST SEMESTER	
M 7:30	Campus Women's Gym. 153, Christensen

Modern Dance—for Men and Women. No credit. One hour, weekly. \$5, plus \$1 laboratory fee.

Including basic dance techniques for general body control, with theoretical principles and the practical application of form and analysis in dance composition as an art form.

FIRST SEMESTER		SECOND SEMESTER	
Th 6:30	Campus Women's Gym. 151, Gardner	Th 6:30	Campus Women's Gym. 151, Gardner

Gymnastics for Body Building—for Women. No credit. One hour, weekly. \$5, plus \$1 laboratory fee.

A general course in gymnastic movement for strength and balance, improvement in posture and carriage, and control of weight.

FIRST SEMESTER

W 6:30 Campus Women's Gym. 151, Snell

American Country Dancing—for Women. No credit. One hour, weekly. \$5, plus \$1 laboratory fee.

A recreational course reviving old American quadrilles, contradances, round dances, and the lancers.

FIRST SEMESTER

M 6:30 Campus Women's Gym. 151, Kane

Elementary Tennis—for Women. No credit. One hour, weekly. \$5, plus a fee of \$1 for use of the tennis courts in the spring season.

Group and individual instruction. Class divided into two sections, beginning and intermediate players. Instruction to all in the forehand and backhand drive, the service, and the chop. To the intermediates (those who know how to play tennis) technique of the lob, smash, drop shot, and volley is given. First six weeks instruction given indoors; last six weeks at the University tennis courts. Individual practice for the improvement of strokes working with the tennis robot. Students furnish own tennis rackets and balls.

SECOND SEMESTER

M 6:00 Campus Women's Gym. 151,
Christensen

Classes for Men

Badminton Club. No credit. One period, 17 weeks, \$5.

Four periods per week, as scheduled below, will be devoted to playing; not designed for teaching or coaching the game. Registration will be by periods, with a maximum of 16 players accepted for each. Prospective students should register at the campus office of the General Extension Division to insure acceptance in any period. Registration may be for more than one period per week. Students furnish own rackets and shuttlecocks.

Periods: 6:00 to 7:30 p.m., and 7:30 to 9:00 p.m. University Armory, Monday, and Wednesday, beginning November 28 and continuing 17 weeks, with a recess at Christmas, until April. In charge, Smith, Bowman.

N.B.—The period 7:30 to 9:00 p.m., Wednesday, will be open to both men and women.

Swimming—for Men. No credit. One hour, weekly. \$5.

Class and individual instruction. Woolen bathing suits not permitted. Health examination at first meeting. Other sections arranged on demand.

FIRST SEMESTER

M 8:05 Campus Athletic Bldg., Thorpe

SECOND SEMESTER

M 8:05 Campus Athletic Bldg., Thorpe

Golf—for Men. No credit. One hour weekly. \$5, plus \$1 laboratory fee.

The fundamentals of golf—the clubs, the grips, stance, drive, etc., with some attention to historical and tournament aspects. Motion pictures will show proper form of stroke. First six weeks in class; next five weeks, individual instruction in driving nets, on schedule arranged to suit members of class; last six weeks, weather permitting, at University Golf Course, practice field, where various local professionals will assist. (Outdoor schedule adjusted to light.) Students furnish own clubs.

SECOND SEMESTER

M 7:00 Campus Physics Auditorium,
Smith, Larson, Bolstad

PREVENTIVE MEDICINE AND PUBLIC HEALTH

N.B.—Classes carry credit in the College of Science, Literature, and the Arts, as well as in the College of Education.

53 Elements of Preventive Medicine. 5 credits. \$17.

Nutrition, diet, susceptibility, resistance, and immunity to disease; methods of spread and prevention of communicable and degenerative diseases; protection of food, water, and milk; school health work; vital statistics. Prereq., 12 cred. in biological sciences, or consent of instructor.

SECOND SEMESTER
T 6:20 Campus Millard 129, Cowan

59 Health of the School Child. 3 credits. \$10.

For teachers and others interested in the health and development of the school child. Mental and physical growth; discovery of physical defects; exercises; fatigue; emotional problems; health habits; diseases of school children; practical problems of health supervision and health instruction. For prerequisites for degree, see instructor.

SECOND SEMESTER
M 6:20 Campus Millard 129, Ellis

60 Tuberculosis and Its Control. \$10.

A nontechnical class, particularly for nurses, social workers, teachers, and others interested. History of tuberculosis movement and campaign in the United States; early diagnosis and sanitary treatment; tuberculosis in children; psychology of tuberculosis; supervision of returned sanatoria patients; state program for the eradication of tuberculosis; legislation. For credit and prerequisites consult instructor.

SECOND SEMESTER
Th 7:30 Campus Univ. of Minn. Hosps.
Eustis Aud., Myers

62-63† Principles of Public Health Nursing. 3 credits each semester; both required for credit. \$10.

Development of principles of organization, administration of public health nursing; methods of co-operation of social agencies; health teaching in promotion of individual and community well-being. Primarily for public health nurses. Prereq. for degree, P.M.&P.H. 53.

FIRST SEMESTER		SECOND SEMESTER	
62	M 6:20 Campus Millard 201, Palmer	63	M 6:20 Campus Millard 214, Palmer

63 Special Fields in Public Health Nursing. 3 credits. \$10.

Development, scope of program, and analysis of services in various special fields of public health nursing. Prereq., 62 or equivalent.

N.B.—This class is provided for nurses who have already completed the preceding class; under a new arrangement it is combined with Class 62, under a common title (see above) and students beginning the sequence should take the new classes.

FIRST SEMESTER
M 6:20 St. P. Ext. Center 204, Shalit

BUSINESS CLASSES

This department recognizes the professional status of the business executive. Scientific methods in analyzing business data, trained intelligence in handling the human relationships inherent in business, and a well-developed sense of moral responsibility will be the foundations of business effectiveness of the future. The training of prospective executives along these lines is more important than any detailed drill on special processes. At the same time there are those with definite interest in certain special fields who seek improvement and advancement, and to these the opportunity for scientific training and information is invaluable. The classes here offered aim to serve both classes of students; and those whom they serve are able, because of their daily employment in work related to their studies, to make the most advantageous use of their opportunity.

CERTIFICATES

The General Extension Division certificate in business is awarded to students who have met the requirements listed below, as a recognition of their completion of a well-planned program of study. This program contains a basic core requirement which is a broad and general preparation for business life. In addition, it offers a number of specialized lines on which the student may concentrate as a specific preparation for his immediate vocation.

1. Each candidate must have completed 90 credits, with an average grade of C, including the following basic requirements:

	Credits
Principles of Economics (Econ. 6-7)	6
English* (Eng. 4-5-6, or 1ex-2ex)	6
Business Law (B.A. 51, 52, and either 53 or 54ex)	9
Principles of Accounting	9
Elements of Money and Banking (Econ. 3)	3
Elements of Statistics (Econ. 5)	3
Advanced General Accounting (B.A. 139)	3
(Not required of accounting students.)	
Corporation Finance (B.A. 155)	3
Business Cycles (Econ. 149)	3
Investments (B.A. 146)	3
Orientation (Man in Nature and Society)	6
Total	54

* Students whose work in English is not entirely satisfactory may be required to take other English classes.

2. Each candidate must also have completed 18 credits in one of the following groups, selecting the credits from the classes listed below:

- a. **Accounting:** Practice and Procedure (B.A. 150-151); Auditing (B.A. 135-136); Cost Accounting (B.A. 152-153, 133, 181A); Income Tax Accounting (B.A. 134); Accounting Topics (B.A. 180-181-183A).
- b. **Finance:** Advanced Money and Banking (B.A. 142); Labor Problems (Econ. 161); Securities Market (B.A. 148); Economics of Public Utilities (B.A. 165); Public Finance (B.A. 58); Advanced General Economics (Econ. 103-104 or B.A. 101-102); Cost Accounting (B.A. 152-153); Business Law (B.A. 54ex.)
- c. **General Business:** Business Policy (B.A. 109); Geography 41, 51; Cost Accounting; Labor Problems (Econ. 161); approved electives.
- d. **Insurance:** Psychology 6 or 9 credits; Life Insurance (B.A. 59); Fire and Marine Insurance (B.A. 60); Casualty Insurance (B.A. 61); Fidelity and Surety Bonding; Life Insurance Salesmanship; Mathematics.

- e. **Advertising:** Psychology 1, 2, 56; Journalism 13, 69; Elementary Advertising (B.A. 88); Retail Advertising; Advanced Advertising and Typography (B.A. 194); Commercial Drawing.
- f. **Merchandising:** Retail Credits; Retail Store Management (B.A. 69); Survey of Marketing (B.A. 77); Psychology 1, 2, 56; Elementary Advertising (B.A. 88); Retail Advertising; Transportation (B.A. 71-72.)
- g. **Transportation (Traffic):** Economics of Public Utilities (B.A. 165); Geography 41, 51, 102; Transportation (B.A. 71-72); Casualty Insurance (B.A. 61); Fire and Marine Insurance (B.A. 60); General Insurance.
- h. **Personnel Administration:** Personnel Administration (B.A. 167); Advanced Personnel Administration (B.A. 168); Psychology 1, 2, 130, 160; Labor Problems (Econ. 161); Labor Legislation and Social Insurance (Econ. 164); Casualty Insurance (B.A. 61); Sociology (various).

3. The remaining 18 credits, to make a total of 90, may be chosen from any classes offered in business subjects and any classes in Science, Literature, and the Arts or Engineering which may be approved. Classes in the following subjects will be acceptable, unless when offered they bear the indication that they are not acceptable: English Composition and Literature; Geography; History; Interior Decorating; Journalism; Mathematics; Parliamentary Law; Philosophy; Political Science; Psychology; Speech; Textiles; Sciences such as Anthropology, Chemistry, Geology, Zoology, Sociology.

4. Students who have completed 45 credits of the above certificate requirement and have had these credits approved by the Students' Work Committee will be granted a preliminary certificate. These preliminary certificates are for such use as students may find it possible to make of them and are to be issued informally.

5. Students who have, previous to 1932-33, entered upon a program for the completion of the requirements for one of the 45-credit certificates, which are replaced by the above 90-credit certificate, will be protected until the completion of their work and the appropriate certificates will be issued informally.

DEGREES

Candidates for Degrees.—With a few exceptions all of the classes offered in business carry credit toward a degree in the School of Business Administration. The classes which do not are specifically indicated in their description. It is necessary, however, for the students who are interested in degrees to secure their credits in two separate units. The first is the prebusiness course, or the first two years, which is administered in the College of Science, Literature, and the Arts. These requirements are modifications of those required for the Junior College certificate offered by the General Extension Division, and embrace a number of subjects other than those specifically concerned with either economics or business administration. Theoretically this prebusiness requirement should be completed before the work of the Senior College is done. In practice, however, most extension students do more of the work of the Senior College than of the work of the Junior College in working for their various certificates. Provision is made, however, for arranging an approved curriculum for all students, regardless of the order in which some of their work may have been done. A student desiring such a curriculum must apply to the dean of the School of Business Administration at least one year before he expects to be eligible for a degree, and complete at least 45 credit hours of the requirements for a degree under the supervision of the adviser appointed for him. The Students' Work Committee of the General Extension Division will be glad to assist the student in arranging for this advice.

Extension classes are open to registration by any person qualified by maturity and ability to profit by the study. In practically all cases only those who expect to qualify for a university degree will be expected to meet the requirements of prerequisites. PREREQUISITES ARE STATED FOR INFORMATION, NOT AS OBSTACLES.

DESCRIPTION AND PROGRAM OF CLASSES

ACCOUNTING

The practice of offering two sequences, one with laboratory practice and one without, to begin the study of accounting has been discontinued. The beginning course for the current year (Principles of Accounting 20L and 25L, 8 credits) is a combination of textbook and laboratory instruction. It is designed to meet the requirements of all students, whether undertaking the study of accounting to learn their own interest and qualifications with respect to it, or to train themselves for actual work in the field, or for advanced study, to understand accounting procedure and concepts as related to other fields in which they are interested. Specialization in advanced courses can be made after completion of two semesters of study of Principles of Accounting. Only students previously enrolled in Econ. 20 or Econ. 25 will be admitted to Econ. 26 for the current year. This course will not regularly be offered in subsequent years.

Econ. 20L-25L† Principles of Accounting and Accounting Laboratory. 4 credits each semester. \$13.50, plus \$1 materials fee. Both required for credit.

Lectures and discussions with working out of selected cases; compilation of accounting data; balance sheets, operating statements, accounting records, adjustment of accounts, accounting work sheets; the principles underlying the computation of profit and loss and the statement thereof. No prereq.

FIRST SEMESTER				SECOND SEMESTER			
20L	M	6:20	Campus Vincent 307, Smith	25L	M	6:20	Campus Vincent 307, Smith
	Th	6:20	Mpls. N. W. Bank Bldg. 603, Smith		Th	6:20	Mpls. N. W. Bank Bldg. 603, Smith

N.B.—The N. W. Bank Bldg. class is limited to 30, accepted in the order of registration.

T	6:20	Campus Vincent 307, Ostlund	T	6:20	Campus Vincent 307, Ostlund
T	6:20	St. P. Ext. Center 202, LeBorious	Th	6:20	St. P. Ext. Center 202, Blandin
Th	6:20	St. P. Ext. Center 202, Blandin	F	6:20	St. P. Ext. Center 202, LeBorious
F	6:20	St. P. Ext. Center 202, LeBorious			

N.B.—The following Combined Course offers Accounting 20L the first eight weeks, 25L the second eight weeks. Fee, \$13.50 each course, plus materials fee. Registration and fees accepted for Combined Course or for one class at a time, either class.

SECOND SEMESTER	
TF	6:20 St. P. Ext. Center 202, 206, Blandin

Econ. 26. Intermediate Accounting. 3 credits. \$10.

The fundamentals of accounting; accounts, statements, valuation, depreciation, sinking funds, surplus, reserve accounts, capital accounts; lectures supplemented by textbook, without laboratory. Prereq., Econ. 20 and 25.

FIRST SEMESTER	
26	W 6:20 Campus Vincent 307, Ostlund

Elements and Principles of Accounting (A.I.B.). I and II. 7½ credits for 2 semesters, 12 weeks each; \$12.50 each semester.

A special class, primarily for members of the American Institute of Banking, Minneapolis chapter, covering the essentials of Economics 20, 25, and 26 (or 20L and 25L), which see above. Students completing both semesters receive 7½ credits and may continue with advanced classes in accounting. No prereq.

FIRST SEMESTER (Begins September 23)		SECOND SEMESTER (Begins January 23)	
MF	6:40 Mpls. N. W. Bank Bldg. 603, Lund	MF	6:40 Mpls. N. W. Bank Bldg. 603, Lund

B.A. 150-151† Accounting Practice and Procedure. 3 credits each semester. Both required for credit. \$10, plus \$1 materials fee.

Practice in the peculiar accounting problems of business and the particular skills of the practicing accountant. Prereq., Econ. 26 or equivalent.

FIRST SEMESTER			SECOND SEMESTER		
150	M 6:20	St. P. Ext. Center 202, Blandin	151	M 6:20	St. P. Ext. Center 202, LeBorious
	M 8:05	St. P. Ext. Center 202, Blandin		M 8:05	St. P. Ext. Center 202, LeBorious
	T 8:05	Campus Vincent 113, Houston		T 8:05	Campus Vincent 113, Houston

N.B.—Special section for members of the American Institute of Banking, meets for two semesters of 14 weeks each, for sessions of 2½ periods, as follows:

FIRST SEMESTER (Begins September 22)			SECOND SEMESTER (Begins January 26)		
150	Th 6:30	Mpls. N. W. Bank Bldg., Heilman	151	Th 6:30	Mpls. N. W. Bank Bldg., Heilman

B.A. 139 Advanced General Accounting. 3 credits. \$10.

Primarily for the general business student. Interpretation of balance sheets and statements, particularly as found in corporation and investment publications; preparation, analysis, and utilization of statements; use of budgets; accounting methods in different businesses. Prereq., Econ. 26 or 26L.

SECOND SEMESTER
W 6:20 Campus Vincent 205, Heilman

B.A. 152-153† Cost Accounting. 3 credits each semester. Both required for credit. \$10.

Principles used to determine the profitableness of each branch of manufacturing, and basis for judging the relative efficiencies of operation; materials, labor, and burden, continuous process and production order costs; burden distribution methods, standard costs, etc. Prereq., Econ. 26 or 26L, or equivalent.

FIRST SEMESTER			SECOND SEMESTER		
152	M 4:30	St. P. (A.I.B.) First National Bank, Sevenich	153	M 4:30	St. P. (A.I.B.) First National Bank, Sevenich
	M 6:20	St. P. Ext. Center 206, Tuttle		M 6:20	St. P. Ext. Center 200, Tuttle
	T 6:20	Campus Vincent 115, Rotzel		T 6:20	Campus Vincent 115, Rotzel

B.A. 134 Income Tax Accounting. 3 credits. \$10.

Application of income tax laws to various business conditions; possible errors in preparation of income tax reports; state as well as federal problems. Prereq., B.A. 151.

FIRST SEMESTER		
M 6:20	St. P. Pub. Lib. Aud., Connolly	
T 8:05	Campus Vincent 105, Connolly	

B.A. 135-136 Auditing. 3 credits each semester. \$10.

N.B.—Students may register for either without the other.

First semester: the conduct of audits and investigations; setting up of accounts based upon audits; audit reports (all with reference to the work of the public accountant in making audits); meeting requirements of the Securities Act. Second semester: the principles of internal check or audit; accounting systems; application of machine accounting; introduction to budgetary control; the work of the comptroller. Prereq., B.A. 139 or 151.

FIRST SEMESTER			SECOND SEMESTER		
135	M 6:20	Campus Vincent, 113, Reighard	136	M 6:20	Campus Vincent 113, Reighard
	W 4:30	St. P. (A.I.B.) First National Bank, Rotzel			
	W 6:20	St. P. Ext. Center 202, Rotzel			

Constructive Accounting. 3 credits toward certificate only. \$10.

The design and installation of a modern accounting system; the make-up of various forms for use in the system—purchase orders, receiving slips, invoices, requisitions, shop tickets, etc.; design and ruling of books or original entry; ledgers of various kinds.

FIRST SEMESTER

M 8:05 St. P. Ext. Center 206, Tuttle

Accounting Systems. 3 credits toward certificate only. \$10.

Classification of industry according to types of accounting problems; special features of each; constructive, operative, and interpretative features. Case method used.

SECOND SEMESTER

M 8:05 St. P. Ext. Center 200, Tuttle

B.A. 182A Accounting Topics—Audits and Investigations. 3 credits. \$10.

Adjusting journal entries; financial condition; problems in inventory valuation, in property accounting; appraisals; "writing down" of assets, and depreciation; application of funds; balance sheet giving effect of financing; the auditor's "results from operation" statement; material facts; certificates and reports. Prereq., consent of instructor.

SECOND SEMESTER

W 4:30 St. P. (A.I.B.) First National Bank,
Rotzel

W 6:20 St. P. Ext. Center 202, Rotzel

ADVERTISING AND SALESMANSHIP

N.B.—Students without previous training in this field should begin with either Psychology of Advertising or Elementary Advertising. In many ways it is preferable that both classes precede other study; and for credit in the School of Business Administration that order must be followed. The noncredit class in Salesmanship may be taken either before or after other classes in advertising.

Advanced Advertising Procedure, Retail Advertising, and Direct Mail Advertising should be considered advanced classes of a specialized nature, to be chosen according to the special interest of the student, and requiring a knowledge of the applications of psychology to advertising and the use of advertising as a tool in business. Radio Script Writing and Fashion Merchandising, of a very special nature, may be taken without reference to other classes; but even they may be more effectively undertaken if preceded by the two basic classes.

Psy. 56 Psychology of Advertising. (See S.L.A. Classes, page 33 for description and time and place of meeting.)

Salesmanship. 3 credits toward certificate only. \$10.

Principles underlying salesmanship—buying motives, pre-approach, approach, the interview, meeting objections, closing the sale; demonstration sales. No prereq.

FIRST SEMESTER

M 8:05 Campus Vincent 115, Faragher

Th 8:05 Campus Vincent 115, Faragher

SECOND SEMESTER

W 8:05 St. P. Ext. Center 202, Faragher

N.B.—The following two classes, one each semester, form a continuous sequence covering the basic phases of advertising principles and procedures.

B.A. 88 Advertising (Elementary). 3 credits. \$10.

Covers two important phases of advertising: the place of advertising in business and advertising procedure. Attention to planning an advertising campaign, including market research, appropriation, choice of media, scheduling, preparation of copy, and layout. Prereq. for degree, B.A. 77 and Psy. 56.

FIRST SEMESTER

Th 6:20 Campus Vincent 105, Mills

Th 6:20 St. P. Ext. Center 206, Hertz

B.A. 194 Advanced Advertising Procedure. 3 credits. \$10.

Problems or case studies, continuing Elementary Advertising with especial emphasis on typography and layout. One half the work will be done in the typography laboratory of the Department of Journalism, under the direction of Professor Barnhart, when lengthened laboratory hours will provide for setting and making up with type. Prereq. for degree, B.A. 88.

SECOND SEMESTER

Th 6:20 Campus Vincent 105, Barnhart, Mills

Retail Advertising. 3 credits toward certificate only. \$10.

Practical training in the fundamentals of modern retail advertising. Retail store organization, and the advertising department and publicity division; types of retail advertising and their relation to types of retail stores; analysis of the market; planning retail advertising and advertising department procedure; fundamentals of typography, printing, and engraving, illustrated by field trips to printing and engraving plants; writing *selling* copy and headlines; layout; newspapers and other media for retailers; the qualifications of a retail advertising person. Prereq., see instructor.

SECOND SEMESTER

T 6:20 St P. Ext. Center 204, Dresescraft
W 6:20 Campus Vincent 115, Dresescraft

Fashion Merchandising. 3 credits toward certificate. \$10.

The relation of fashion to the problems of the merchant. Topics included: history of fashion; fashion trends and movements; relation to art; American and foreign markets; fashion forecasting and promotion; fashion in special fields, etc. Fashion as a career for workers. Special lectures by selected Twin City merchandisers. No prereq.

FIRST SEMESTER

T 6:20 Campus Vincent 1, Chute

SECOND SEMESTER

M 6:20 St. P. Ext. Center 201, Chute

Direct Mail Advertising—Sales Letter Writing. 3 credits each semester for certificate only. \$10.

Personal coaching course covering: the vital points in planning campaigns; selecting papers and processes; "timing" mailings; layout of mailing pieces; getting letters and advertising read; getting low-cost inquiries; how to write letters that pull; how to "follow-up" by mail; how to close sales; the "Check Chart" for increasing results; the 5 "MUST" factors of every mailing; the 12 major mistakes that ruin returns. Students work out own advertising and letters with instructor's guidance. Open to all; no prereq.

FIRST SEMESTER

M 6:20 Campus Vincent 112, Brownson

SECOND SEMESTER

M 6:20 Campus Vincent 115, Brownson

Radio Script Writing I. No credit. \$10.

The fundamentals of the technique of writing for the radio, which is distinct; for advertisers, propagandists, promoters; script of different types—commercial, educational, other; announcements for varying time periods, weather, news, and other "spots"; longer script with dialog, radio drama, with music and "sound effects"; special programs. Repeated second semester. Prereq., a good command of English.

FIRST SEMESTER

T 8:05 St. P. Ext. Center 204, Weaver
F 6:20 Campus Folwell 308, Weaver

SECOND SEMESTER

M 6:20 Campus Folwell 308, Weaver

Radio Script Writing II. No credit. \$10.

For those who have completed Radio Script Writing I. Basic plan: writing a series of 15- or 30-minute programs for consecutive presentation; may be commercial or educational; but must exemplify radio showmanship and entertainment.

SECOND SEMESTER

F 6:20 Campus Folwell 308, Weaver

BANKING AND FINANCE

Econ. 3 Elements of Money and Banking. 3 credits. \$10.

This class has formerly been known as Mechanism of Exchange, and as Finance A. The nature and functions of money and credit; the development of our own monetary system to the present time, with a critical examination of the reasons for the various changes; a study of commercial banking and the Federal Reserve system; the form and functions of the other types of financial institutions. No prereq.

FIRST SEMESTER

M 6:20 Campus Vincent 115, Stehman
W 6:20 St. P. Ext. Center 206, Kozelke

B.A. 58 Elements of Public Finance. 3 credits. \$10.

Public expenditures, revenues, debts, budgets; special attention to tax principles, practices, and burdens. Adapted to citizens generally, but of especial interest to public officials. Required of all candidates for degree in business. Prereq. for degree, Econ. 6-7.

SECOND SEMESTER

Th 8:05 Campus Vincent 115, Borak

B.A. 146 Investments. 3 credits. \$10.

A general survey of the external and internal factors influencing the price of securities and of the principles of an investment policy for the needs of the average conservative investor. Prereq. for degree, Econ. 3, 6, 7, and B.A. 155.

FIRST SEMESTER

W 6:20 Campus Vincent 112, Uppren

B.A. 148 The Securities Market. 3 credits. \$10.

The problems of the large corporate investors; the technique of selection and supervision of securities in such institutions as banks, trust companies, insurance companies, and investment trusts. Some practice in analysis of securities. Recommended to present, or potential, investment counselors, bond salesmen, analysts, or investment officers. Prerequisite for degree credit, B.A. 146 and B.A. 155.

SECOND SEMESTER

W 6:20 Campus Vincent 112, Uppren

B.A. 155 Corporation Finance. 3 credits. \$10.

Forms of corporate organizations; types of corporate securities and their uses; raising capital; holding companies, mergers, receiverships, and reorganizations; recent changes in corporate practices; relation of the corporation to creditors, minority stockholders, and the public. Prereq., Econ. 3, 6, 7.

SECOND SEMESTER

M 6:20 Campus Vincent 112, Stehman
W 8:05 St. P. Ext. Center 203, Lundén

BUSINESS ADMINISTRATION

B.A. 76-76B Retail Credits and Collections, I-II. 3 credits, 76 for degree, 76B for certificate only. \$10.

Economic and legal background of credit; relation of retail credit to other forms; sources of retail credit information; work of credit bureau and credit department; installment credit practice. Second semester devoted to organization and operation of retail collection departments; collection policies; collection methods; planning collection letters; locating "skips"; use of attorneys and collection agencies.

Conducted jointly by the instructors and several experienced retail credit men of the Twin Cities.

FIRST SEMESTER

76 Th 6:20 Campus Vincent 113,
Chute and others

SECOND SEMESTER

76B Th 6:20 Campus Vincent 113,
Thrush and others

Management for the Small Business. No credit. \$10.

The type of problems confronting management in modern business; interrelation of production, finance, sales, personnel, with accounting and business methods. Designed to create an awareness of the policies and practices now used in business, on the part of those preparing to enter positions of responsibility. Open to all.

FIRST SEMESTER

T 8:05 Campus Vincent 205, Wexman

B.A. 89 Production Management. 3 credits. \$10.

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. No prereq. (Same as Mech. Eng. 171.) Included in core group requirements for all candidates for a degree in business.

FIRST SEMESTER

T 6:20 Campus Mech. Eng. 202, Koepke

Production Management—Time and Motion Studies. See Industrial Engineering 174, page 67, for description of this class.

Econ. 161 Labor Problems and Trade Unionism. 3 credits. \$10.

Employment; hours; wages; extent and stronghold of unionism; open and closed shops; collective bargaining; industrial unrest; government regulation of labor disputes. Special emphasis on the current proposals for industrial recovery and the re-employment of labor. Prereq., Econ. 6-7.

FIRST SEMESTER

M 8:05 Campus Vincent 205, Yoder

Econ. 164 Labor Legislation and Social Insurance. 3 credits. \$10.

The economic aspects of labor legislation, including minimum wage laws; hours legislation; factory acts; accident, health, old age, and unemployment insurance; mothers' pensions. Prereq., Econ. 161.

FIRST SEMESTER

Th 8:05 St. P. Ext. Center 203, Schmidt

B.A. 167 Personnel Administration. 3 credits. \$10.

Evaluation of managerial policies and devices for the control of personnel; determination of labor needs; methods of contacting workers; selective devices; training and safety programs; compensation. Prereq. for degree, Econ. 161.

SECOND SEMESTER

M 8:05 Campus Vincent 205, Yoder

BUSINESS ENGLISH**1ex Business English.** 3 credits toward certificate. \$10.

A practical class for business people who recognize the value of good English in business and in general writing and conversation. Various kinds of business writing are studied with some attention to letter types; application of good grammar and correct forms in all business writing. No prereq.

FIRST SEMESTER

M 6:20 Campus Folwell 109, Mallam

T 6:20 St. P. Ext. Center 208, Guthrie

Th 6:20 Campus Folwell 101, Haga

SECOND SEMESTER

M 8:05 Campus Folwell 101, Haga

2ex Business Correspondence. 3 credits toward certificate. \$10.

A continuation of Business English, with less emphasis on grammar and form, and more upon the general principles underlying successful letter writing; types of letters—

adjustment, acknowledgment, recommendation, application, follow-ups, sales, interdepartmental, etc. No prereq., but students will do well to complete Business English I first.

SECOND SEMESTER

M 6:20 Campus Folwell 101, Mallam
W 6:20 St. P. Ext. Center 203, Guthrie

N.B.—For classes in English Composition see S.L.A. Classes page 20.

BUSINESS LAW

B.A. 51,52,53,†54ex Business Law. 3 credits each semester; 51, 52, and 53 must be completed before credit for degree is granted; 51, 53, and either 52 or 54ex for extension certificate. 54ex, credit toward extension certificate only. \$10, plus \$1 materials fee each class; no textbook.

Comprehensive course in the fundamental principles of law for the business and professional man. B.A. 51: contracts—formation, operation, transfer, discharge; agency—creation, nature and terms of the relation, rights, and liabilities of the parties. B. A. 52: organization, management, and responsibility of associations; business trusts; partnerships and corporations; bankruptcy. B.A. 53: personal property and transactions concerning it; law of sales, bailments, and of the Uniform Negotiable Instruments and Bills of Lading acts. B.A. 54ex: nature and classification of real estate; deeds and conveyances; landlord and tenant; recording and abstracting; Torrens titles; liens and mortgages; wills, probating of estates, and duties of administrators and executors. No prereq., but B.A. 51 should precede other classes.

FIRST SEMESTER			SECOND SEMESTER		
51	M 6:20	St. P. Ext. Center 201, Jackman	51	M 6:20	St. P. Ext. Center 206, Jackman
	M 8:05	St. P. Ext. Center 201, Jackman		T 8:05	Campus Vincent 6, Jackman
	T 6:20	Campus Vincent 6, Jackman	52	M 8:05	St. P. Ext. Center 206, Jackman
	W 6:20	Campus Vincent 6, Jackman		T 6:20	Campus Vincent 6, Jackman
52	T 6:20	Campus Vincent 112, Chapin	54ex	M 8:05	St. P. Ext. Center 201, Chapin
	W 8:05	St. P. Ext. Center 204, Chapin		W 6:20	Campus Vincent 113, Jackman
53	T 8:05	Campus Vincent 6, Jackman			

ECONOMICS AND STATISTICS

Econ. 5 Elements of Statistics. 3 credits. \$10.

The principles of statistical methods applied to business; collection, tabulation, and interpretation of statistical data; averages, ratios, errors, index numbers, graphs, and charts. No prereq.

FIRST SEMESTER	
W 6:20	Campus Vincent 105, Graves
W 8:05	St. P. Ext. Center 206, Kozelka

Econ. 6-7† Principles of Economics 1-2. 3 credits each semester. \$10. Both required for credit.

Fundamental principles underlying the economic activities of society; utility and valuation; prices and the cost of production; the factors of production; division of labor and its relation to the development of industry; wages, rent, interest; capitalization, enterprise, business profits. Fundamental to the study of any business subject. No prereq.

FIRST SEMESTER		SECOND SEMESTER			
6	M 8:05	St. P. Ext. Center 203, Myers	6	W 6:20	Campus Vincent 210, Graves
	Th 8:05	Campus Vincent 207, Graves	7	M 8:05	St. P. Ext. Center 204, Myers
				Th 8:05	Campus Vincent 207, Graves

Econ. 84 Comparative Economic Systems. 3 credits. \$10.

An impartial analysis of the basic principles of the opposing systems of economics (modified individualism, state socialism, communism and the Russian experiment, fascism);

an examination of the application of each in practice; comparative appraisal of the effect of each upon individuals, economic classes, and institutions. Prereq. for degree, Econ. 6-7.

FIRST SEMESTER

M 6:20 St. P. Ext. Center 203, Myers

Econ. 103-104† Advanced Economics—Competition, Monopoly, and Inequality of Incomes. 3 credits each semester; both required for credit. \$10.

An advanced course in economic theory, prices, and costs; the value theory; the distribution of wealth—causes and effects of inequality; the distribution of income—inequality, rent, wages, interest, and profits. Prereq., see instructor. May be substituted for B.A. 101-102 in requirements for degree in business.

FIRST SEMESTER

103 Th 6:20 Campus Vincent 6, Waite

SECOND SEMESTER

104 Th 6:20 Campus Vincent 6, Waite

B.A. 112 Business Statistics. 3 credits. \$10.

The technique of time series analysis; methods of determining normal or trend values; methods of measuring seasonal variation and adjustment of data for seasonal fluctuation; measurement of degree of relation between time series, graphically and by correlation technique; analysis and comparison of index numbers of local and national business conditions. Prereq., Econ. 5 (or 14 or equivalent.)

SECOND SEMESTER

W 8:05 Campus Vincent 6, Kozelka

Econ. 140 The Co-operative Movement. 3 credits. \$10.

The underlying principles of organization and operation of co-operatives; advantages and disadvantages of the co-operative form of economic organization; consumers' co-operatives; producers' co-operatives; the origin and present status of the movement. Prereq. for degree., Econ. 6-7.

SECOND SEMESTER

M 6:20 St. P. Ext. Center 204, Myers

Econ. 149 Business Cycles. 3 credits. \$10.

A critical examination of business cycle theory, with a discussion of proposed methods for eliminating or moderating industrial fluctuation. The relation of business cycles or industrial fluctuations to: the wage system; the influence of machine technique; crop fluctuations; wars, tariffs, and other "irregular" factors; the distribution of wealth; the problem of "purchasing power"; private profit and "competition"; effect of monopoly. Progress and stability; programs of taxation and public works as proposed remedies; possibilities under socialism. Prereq., Econ. 141 or B.A. 142, or consent of instructor.

SECOND SEMESTER

W 6:20 Campus Vincent 207, Marget

B.A. 165 The Economics of Public Utilities. Not offered 1938-39.

Econ. 166 International Economic Problems. 3 credits. \$10.

The pre-war economic situation; economic effects of the war and the peace treaty; the economics of conquest; raw materials, population, and war; reparations and war debts; unstable factors in the post-war decade in relation to the depression beginning in 1929; the export of capital; selected problems in economic policy. Prereq., Econ. 6-7.

FIRST SEMESTER

W 6:20 Campus Vincent 207, Marget

Econ. 161 Labor Problems and Trade Unionism

Econ. 164 Labor Legislation and Social Insurance

B.A. 167 Personnel Administration

} See Business Administration page 57.

Econ. 187 Economic Reform. Not offered 1938-39.

INSURANCE

3ex General Insurance. 3 credits toward certificate only. \$10.

A basic course in the principles and practices involved in underwriting the various forms of insurance coverage, property and casualty in particular. Prerequisite to all other insurance classes. No prereq.

FIRST SEMESTER

T 6:20 Campus Vincent 2, Ware

B.A. 59 Life Insurance. *Not offered 1938-39.***B.A. 60 Fire and Marine Insurance.** 3 credits. \$10.

Historic background of fire and marine insurance; insurance carriers; standard policy; state regulation and supervision; agency viewpoint of rate making; inland marine forms and coverages. Prereq., Econ. 6-7.

FIRST SEMESTER

M 6:20 Campus Vincent 2, Law

B.A. 61 Casualty Insurance. 3 credits. \$10.

The risks of insurance coverages and policy provisions in the more important lines of casualty insurance—accident and health, employer's liability, workmen's compensation, automobile, robbery and theft, plate glass, and miscellaneous damage types. Prereq., Econ. 6-7.

SECOND SEMESTER

M 6:20 Campus Vincent 2, McGee

TEXTILES

Textiles. 3 credits. \$10, plus materials fee 50 cents.

A class for consumers, store people, and those in the clothing industry. Woven and knit fabrics of cotton, silk, rayon, wool, and linen; manufacturing and finishing processes; qualities, tests, uses, maintenance; explanation of technical terms and of characteristics determining comparative values; applications to men's and women's apparel and to household items. No prereq.

FIRST SEMESTER

M 6:20 Campus Chemistry 115, Caplin

T 6:20 Mpls. N. W. Bank Bldg. 690, Caplin

W 8:05 St. P. Ext. Center 202, Caplin

TRANSPORTATION (TRAFFIC)

B.A. 71,72 Transportation: Services and Charges I and II. 3 credits each semester. \$10.

The rail, water, air, and highway transportation facilities, services, rates, and laws, and their relation to business establishments; problems in handling freight, express, and parcel-post shipments; scope, selection, and use of the facilities and services of common carriers; rate structures; problems involving freight classification and use of tariffs. 71 to precede 72. Prereq., Econ. 6-7.

FIRST SEMESTER

71 Th 6:20 Campus Vincent 2, Nightingale

SECOND SEMESTER

72 Th 6:20 Campus Vincent 2, Nightingale

Advanced Traffic and Transportation I and II. 3 credits each semester toward certificate. \$10.

Advanced study of tariffs and rate structure; regulatory laws, state and federal, governing rail and highway transport; practice and procedure before rate and classification committees, state commissions, and the Interstate Commerce Commission; preparation of informal, formal, and L. and S. cases before regulatory commissions. Prereq., B.A. 71, 72, or equivalent.

FIRST SEMESTER

I F 6:20 Campus Vincent 2, Mann

SECOND SEMESTER

II F 6:20 Campus Vincent 2, Mann

ENGINEERING CLASSES

In this department two kinds of classes are offered for two rather distinct classes of students. Classes of regular college standing are offered for those who wish to accumulate as much of the work of the regular engineering course of study as they can while regularly employed. For those who do not seek an engineering degree but wish practical preparation for some phase of engineering procedure, some classes are offered that are not a part of the program of the Institute of Technology. The student's own needs or desires are to determine which kind of work is to be undertaken, and no disparaging distinctions are made between the two kinds.

Classes of the second kind are in the program indicated as being without prerequisites, for the most part, and either without credit or with credit toward an extension certificate only. They are offered freely to all who have the appropriate interest, for such value as they may have for the student. Each such class is usually complete in itself, except where two classes, in successive semesters, make up a unit. These classes are not offered as equivalents for any part of the required work of the Institute of Technology.

The regular collegiate classes offered correspond to those given to full-time engineering students, and are based on the same prerequisites. They are offered for those who wish to be thoroly prepared, do the maximum work demanded, and perhaps ultimately become candidates for an engineering degree. Students who do not meet the prerequisite requirements may be admitted to these classes, but only as auditors who will not make extra demands upon the instruction and retard the progress of the prepared students.

CERTIFICATES

The General Extension Division certificate in engineering is issued as an evidence of the completion of an organized program of study in engineering subjects. While not the equivalent of a degree in engineering, it represents a comprehensive yet concentrated training in several branches of engineering which will be found valuable in many phases of industry and in activities which utilize engineering ability. The program embraces a core of fundamental subjects, including all the mathematics required for an engineering degree, and the opportunity for specialization in either of several engineering fields. The requirements are as follows:

1. Each candidate must complete a total of 90 credits with an average grade of C in engineering subjects, of which the following are required:

Mathematics:	Credits
9 Higher Algebra	5
11 College Algebra	5
12 Trigonometry	5
13 Analytical Geometry	5
24 Differential Calculus	5
25 Integral Calculus	5
Mechanical Drawing 1-2	6
Technical Mechanics	5
Strength of Materials	5
Total	46

2. Each candidate will be required to complete additional classes totaling approximately 30 credits in one of the separate fields of Engineering—Aeronautical, Architectural, Chemical, Civil, Electrical, Mechanical.

3. The remaining credits, approximately 14, may be completed either in optional courses within the chosen field, or in approved elective courses in one of the allied fields.

Selection of classes in which to earn these credits should be made with the advice and approval of the Students' Work Committee.

4. Upon the completion of an approved 45 credits a preliminary certificate will be informally issued for such purposes as the candidate may wish to use it. The approval of classes which will yield these 45 credits must be had from the Students' Work Committee.

5. Students who have, previous to 1932-33, entered upon a program for the completion of the requirements for one of the 45-credit certificates, which are replaced by the above 90-credit certificate, will be protected until the completion of their work and the appropriate certificates will be issued informally.

DEGREES

Credits earned in these classes are now accepted toward degrees in the Institute of Technology, without a special examination, whenever the student is qualified by admission and prerequisite study. When a student is desirous of determining his status with respect to a degree he should consult the chairman of the Advanced Standing Committee of the particular unit in which he will do his major work—that is, the College of Engineering and Architecture, the School of Chemistry, or the School of Mines and Metallurgy. The requirements for degrees in these several units are set forth in the Bulletin of the Institute of Technology.

DESCRIPTION AND PROGRAM OF CLASSES

Many of the extension classes in Engineering subjects are open to all, regardless of previous study, who can profit by them. They are designed for those who wish to improve themselves in their industrial positions but who do not expect to become engineers. The descriptions of such classes indicate that there are no prerequisites. Other classes are of such a nature that they cannot be carried through without certain previous study. Descriptions of these classes indicate the necessary prerequisites. **IN ALL CASES THE INSTRUCTOR IS THE JUDGE OF THE ADEQUACY OF PREPARATION AND WILL ACCEPT STUDENTS ACCORDINGLY.**

GENERAL ENGINEERING

Consultation Period. No fee.

A session for guidance purposes, open to all students registered in engineering classes; affords opportunity for consultation, discussion, or study, under direction, in all engineering subjects. An instructor will be present.

FIRST SEMESTER
F 7:00 Campus Main Eng. 136

SECOND SEMESTER
F 7:00 Campus Main Eng. 136

G.E. 70 Use of Engineer's Slide Rule. 1 credit. One hour meetings, weekly. \$5.

Theory and computation practice necessary for those who wish to use the slide rule in ordinary office computations. No prereq. Repeated second semester.

FIRST SEMESTER
T 7:00 Campus Main Eng. 205, Boon

SECOND SEMESTER
T 7:00 Campus Main Eng. 205, Boon

G.E. 81 Cost Estimating. 3 credits. \$10.

Blueprint reading, quantity surveying, mensuration; estimates of concrete, brick, timber, and steel structures. No prereq. Repeated second semester.

FIRST SEMESTER
T 8:05 Campus Main Eng. 205, Boon

SECOND SEMESTER
T 8:05 Campus Main Eng. 205, Boon

AERONAUTICAL ENGINEERING

Aircraft Engines 1-2. 3 credits each semester for certificate only. \$10.

Types of engines and their development; calculation of size and horse power; use of dynamometers and torque stands; aviation gasoline, specifications and tests, octane numbers; principles of ignition, magnetos, starters, carburetors, combustion; modern operation systems, performance; oils and oil testing; the aviation Diesel. Lectures and laboratory tests. No prereq.

N.B.—Taught jointly with M.E. 50 Internal Combustion Engines. Students may enter either semester.

FIRST SEMESTER
1 W 7:30 Campus Oak St. Lab.,
Robertson

SECOND SEMESTER
2 W 7:30 Campus Oak St. Lab.,
Robertson

Elementary Aeronautics and Airplane Construction 1-2. 3 credits each semester for certificate only. \$10.

Nomenclature; theory of lift and drag; wind tunnel; airfoil characteristics; airplane performance; stability and control; types of airplane; demonstration and inspection of airplane and its parts; materials and their properties; principles in propeller theory; navigation instruments; principles of celestial navigation; laying out and checking course; dead reckoning; radio use; magnetic compass and its use; maps and charts; the atmosphere and clouds; reading of weather maps. Prereq., elementary mathematics.

FIRST SEMESTER
1 T 7:30 Campus Armory 105, Brush

SECOND SEMESTER
2 T 7:30 Campus Armory 105, Brush

AIR CONDITIONING

(See *Mechanical Engineering Classes*, page 69)

ARCHITECTURE

Classes in Architectural Design. Not offered 1938-39.

Architectural Drafting. No credit. \$10.

A class for home builders; not for the professional architect. Conventional methods of architectural presentation as used in house planning; detailing, perspective, and rendering, to suit individual needs. No prereq.

FIRST SEMESTER
W 7:30 St. P. Mech. Arts High 103,
Smalley

SECOND SEMESTER
W 7:30 St. P. Mech. Arts High 103,
Smalley

Building Cost Estimating. See General Engineering, page 62.

ART

See also Art Education, (p. 43).

N.B.—All art classes scheduled for a given meeting will be taught simultaneously. Students may enter any unit listed, either semester. The beginning classes in Commercial and Freehand Drawing may, if registration is below minimum, be combined on one night. Class sessions 2½ hours.

Commercial Drawing I-II. 3 credits each semester, toward certificate only. \$10.

Elementary and advanced commercial art; design, lettering, layouts, posters, figure drawing, in pen and ink, pencil, color, or other media. Solutions of practical problems stressed. Open to beginners and advanced students either semester. No prereq.

FIRST SEMESTER
I M 7:30 Campus Main Eng. 417, Doseff

SECOND SEMESTER
II M 7:30 Campus Main Eng. 417, Doseff

Freehand Drawing, Beginning. 1½ credits each semester. \$10.

Drawing from geometric solids, architectural ornaments or figures, and still life, in charcoal, pencil, pen and ink, water color, or other media. Corresponds to Architecture 21, 22, 23, 24, 25, 26. No prereq.

FIRST SEMESTER
T 7:30 Campus Main Eng. 417, Doseff

SECOND SEMESTER
T 7:30 Campus Main Eng. 417, Doseff

Freehand Drawing, Advanced. 1½ credits each semester. \$10. Model fee \$1, payable to instructor.

Life drawing; figure composition; pencil, pen, charcoal, oil, water color; print making. Corresponds to Architecture 27, 28, 29.

FIRST SEMESTER
W 7:30 Campus Main Eng. 417, Burton

SECOND SEMESTER
W 7:30 Campus Main Eng. 417, Burton

CHEMISTRY

N.B.—All Chemistry classes, except Advanced Quantitative Analysis, meet for a minimum of one lecture, one recitation, and three hours laboratory a week. Class periods, 7:30 to 10:00 p.m., both Tuesdays and Thursdays.

9ex‡ General Inorganic—Nonmetals. 5 credits. \$17.

The common nonmetallic elements and their principal compounds; the laws and theories of chemistry. No prereq.

FIRST SEMESTER
TTh 7:30 Campus Chem. 315, 110, Geiger

12ex‡ Qualitative Analysis. 5 credits. \$17.

The laws and theories involved; systematic qualitative analysis. Prereq., 9ex or its equivalent.

SECOND SEMESTER
TTh 7:30 Campus Chem. 315, 110, Geiger

1ex‡ Quantitative Analysis—Gravimetric. 5 credits. \$17.

Principles and methods of gravimetric analysis; typical problems and proper laboratory practice. Prereq., Qualitative Analysis.

FIRST SEMESTER
TTh 7:30 Campus Chem. 310, 315, Geiger

2ex‡ Quantitative Analysis—Volumetric. 5 credits. \$17.

General principles and methods of volumetric analysis. Prereq., Qualitative Analysis.

SECOND SEMESTER
TTh 7:30 Campus Chem. 310, 315, Geiger

7ex‡ Quantitative Analysis—Premedical. 4 credits. \$13.50.

Introductory, covering principles and methods of gravimetric and volumetric quantitative analysis; typical problems and proper laboratory practice. (Given in connection with 2ex.) Prereq., Qualitative Analysis.

SECOND SEMESTER
TTh 7:30 Campus Chem. 310, 315, Geiger

‡ All chemistry classes require a deposit of \$5, payable at Chemistry Department of which \$2 is laboratory fee and the remainder for breakage. The unused portion is to be returned.

123-124-125ex‡ Advanced Quantitative Analysis. 5 credits first semester, \$17; 4 credits second semester, \$13.50.

Prereq. for degree, Analytic Chem. 1-2 or the equivalent.

	FIRST SEMESTER		SECOND SEMESTER
123-124 TTh	7:30 Campus Chem. 310, Geiger	124-125 TTh	7:30 Campus Chem. 310, Geiger

Textiles. See Business Classes, page 60.

CIVIL ENGINEERING

11 Plane Surveying. 3 credits. \$10.

Lectures and problems relating to the use of steel tape, compass, transit, and level; recording, computing, and plotting of field notes; care, use, and adjustment of instruments. Prereq., trigonometry and drawing.

FIRST SEMESTER

T 7:30 Campus Main Eng. 215, Cutler

21 Curves and Earthwork. 3 credits. \$10.

Problems relating to route surveying; mathematics of simple, compound, and spiral curves; vertical curves; plotting of ground line profiles; cross sections and earthwork volumes; mass diagram; overhaul. Prereq., 11 or equivalent.

SECOND SEMESTER

T 7:30 Campus Main Eng. 215, Cutler

M.&M. 26, 127 Technical Mechanics. 5 credits each semester. \$17.

First semester, statics: characteristics of a force, parallelogram law, moments, resultants, equilibrium, friction, etc. Second semester, dynamics: mass, acceleration, governors, work, power, momentum, etc. Prereq., M.&M. 25 (Integral Calculus.)

	FIRST SEMESTER		SECOND SEMESTER
26 M	7:00 Campus Main Eng. 107, Teeter	127 M	7:00 Campus Main Eng. 107, Teeter

M.&M. 129 Hydraulics. 4 credits. \$13.50.

Laws of equilibrium of fluids; flow through orifices and over weirs; pressure and flow through tubes and pipes; flow in conduits and rivers; dynamic pressure of water; elementary principles of turbines and pumps. Prereq., M.&M. 26 (Technical Mechanics.)

FIRST SEMESTER

W 7:30 Campus Main Eng. 107, Teeter

33 Elementary Structural Design. 3 credits for certificate only. \$10.

Designing principles and methods; complete designs and detail drawings of typical simple structures. Prereq., C.E. 32, M.&M. 128, Draw. 23.

FIRST SEMESTER

T 7:30 Campus Main Eng. 203, Darrell

‡ All chemistry classes require a deposit of \$5, payable at Chemistry Department of which \$2 is laboratory fee and the remainder for breakage. The unused portion is to be returned.

135 Advanced Reinforced Concrete Design—Rigid Frame Analysis. 3 credits. \$10.

Solution of continuous beams and rigid frames, by precise moment distribution method; application to problems arising in practice in design of reinforced concrete floors, beams, and columns; design of buildings by principle of continuity; rigid frame bridges. Prereq., C.E. 141-142, or equivalent.

FIRST SEMESTER

Th 7:00 Campus Main Eng. 227, Wise

141-142 Reinforced Concrete and Concrete Design. 3 credits each semester. \$10.

Principles of reinforced concrete; theory of beams, slabs, and columns, with application to ordinary structures; practical features of the design of building, bridges, retaining walls, etc. Prereq., consent of instructor.

FIRST SEMESTER

141 W 7:30 Campus Main Eng. 104,
Andersen

SECOND SEMESTER

142 W 7:30 Campus Main Eng. 104,
Andersen

Engineering Properties of Soils. No degree credit. \$10.

Designed especially for highway engineers but also of value to railroad and foundation engineers. A study of the characteristics of soil, and practical problems of design and construction. Laboratory practice and demonstrations. Continues second semester. Open to all without prerequisites.

FIRST SEMESTER

W 7:30 Campus Exp. Eng. 215, Lang

SECOND SEMESTER

W 7:30 Campus Exp. Eng. 215, Lang

ECONOMICS

Far a variety of classes including Statistics, Finance, Accounting, Advertising and Selling, and Economic Theory, see Business Classes, pages 52 to 59.

ELECTRICAL ENGINEERING

1-2ex Direct Current Machinery. 5 credits each semester towards certificate only. \$17.

Elementary electricity, laws of magnetism, theory of direct current machinery; direct current motors and generators, armature windings, commutation, and wiring diagrams; laboratory of experiments by students to exemplify principles. Begins a three-year sequence covering direct and alternating current machinery. Lectures and laboratory (3 hours) on alternate evenings; meets twice a week. Prerequisite, consult instructor.

FIRST SEMESTER

TTh 7:30 Campus Elec. Eng. 237, Caverley,
and assistant

SECOND SEMESTER

TTh 7:30 Campus Elec. Eng. 237, Caverley,
and assistant

111 to 116 Junior Electrical Engineering. 5 credits each semester. \$17.

N.B.—Class offered this year covers the second half of the sequence, completing work begun 1937-38.

Continues study begun in 11-13-15. Elements of Electrical Engineering, with a study of alternating current circuits and machinery. Requires 4 semesters to complete; credit dependent on completion of all. Lectures and laboratory (3 hours) on alternate sessions; meets twice a week. Prereq., Math. through calculus, and Elec. Eng. 15.

FIRST SEMESTER

MW 7:30 Campus Elec. Eng. 237,
Johnson, Caverley

SECOND SEMESTER

MW 7:30 Campus Elec. Eng. 237,
Johnson, Caverley

ENGINEERING DRAWING

1-2 Engineering Drawing. 3 credits each semester. \$10.

Elements of drafting, representation, geometry, sketching, lettering, working drawings, conventions, tracing. Auxiliary views, multiple projection, detail and assembly drawings. No prereq. Students may enter either class either semester.

N.B.—Three credits given only for completion of entire work of a semester; 1½ credits may be given for satisfactory completion of a half a semester's work, with another registration necessary for the completion of the remainder.

FIRST SEMESTER		SECOND SEMESTER	
1	W 7:30 St. P. Mechanic Arts High 101, Dow	2	W 7:30 St. P. Mechanic Arts High 101, Dow
	Th 7:30 Campus Main Eng. 201, French		Th 7:30 Campus Main Eng. 201, French

22 Structural Drafting. 2 credits for one semester; repeated second semester. \$7.

Details of fabrication of beams, girders, columns, trusses, etc.; material bills. Prereq., Drawing 1.

FIRST SEMESTER		SECOND SEMESTER	
Th	7:30 Campus Main Eng. 201, French	Th	7:30 Campus Main Eng. 201, French

29 Advanced Mechanical Drawing. 2 credits one semester; repeated second semester. \$7.

Working drawings, gearing, cams, developments, multiple auxiliary views, special projections.

FIRST SEMESTER		SECOND SEMESTER	
W	7:30 Campus Main Eng. 101, Herrick	W	7:30 Campus Main Eng. 101, Herrick
W	7:30 St. P. Mechanic Arts High 101, Dow	W	7:30 St. P. Mechanic Arts High 101, Dow

38 Reading Drawings. 2 credits. \$7.

Calculations and estimates of areas, volumes, and weights, and the tabulation of quantities from working drawings; problems concerned with fabrication, manufacture, and construction. Prereq. for degree, Draw. 2; for noncredit students, practical experience sufficient to read simple drawings.

FIRST SEMESTER	
M	7:00 Campus Main Eng. 206, Potter

G.E. 70 Use of Engineer's Slide Rule } See General Engineering, page 62.
G.E. 81 Cost Estimating }

INDUSTRIAL ENGINEERING

M.E. 171 Production Control. 3 credits for certificate only. \$10.

Principles and practice involved in economical production; standardization; requirements for uniformity and interchangeability; jigs, fixtures, special equipment; gages and inspection systems; division of labor; conveying, handling, stores control; fatigue elimination. (Equivalent to Bus. Adm. 89, q. v. page 57.) Prereq., shop experience.

FIRST SEMESTER	
T	6:20 Campus Mech. Eng. 202, Koepke

M.E. 174 Production Management—Time and Motion Studies. 3 credits for certificate only. \$10.

Lectures and laboratory studies of various operations; the use, time, and photographic means of analysis; charting of micromotion results; study of fatigue; rate setting. Primarily for those in charge of production processes. Open to noncredit students without prerequisites.

SECOND SEMESTER	
T	6:20 Campus Mech. Eng. 202, Koepke

MATHEMATICS

The numbers of these courses are those used by the Institute of Technology.

Elementary Algebra. Credit toward entrance only. \$10. Materials fee \$1.
Elements of algebra to quadratic equations. No prereq. Both semesters necessary.

FIRST SEMESTER		SECOND SEMESTER	
M	8:05	Campus Main Eng. 106, Edwards	M 8:05 Campus Main Eng. 106, Edwards

Mathematics Review. No credit. \$10.

A general review course for those who have finished Integral Calculus. Those topics usually omitted from the regular courses in College Algebra, Trigonometry, Analytic Geometry, and Calculus will be taken up.

FIRST SEMESTER		SECOND SEMESTER	
W	6:20	Campus Main Eng. 106, Edwards	W 6:20 Campus Main Eng. 106, Edwards

Solid Geometry. Credit toward entrance only. \$10.

Standard theorems and exercises; practice in special proofs and original exercises. Class will finish December 19; extra sessions arranged to make semester's work complete. Prereq., Plane Geometry.

FIRST SEMESTER	
M	6:20 Campus Main Eng. 104, Edwards

9 Higher Algebra. 5 credits. \$17.

A review and collegiate treatment of the topics of elementary algebra, which is prerequisite. Not open for credit to those who present higher algebra for entrance to college. (Offered in St. Paul 1939-40.)

FIRST SEMESTER	
Th	7:00 Campus Main Eng. 106, Edwards

11 College Algebra. 5 credits. \$17.

Quadratic equations; equations in the quadratic forms; simultaneous quadratic equations; graphical representation; progressions; mathematical induction; binomial theorem; permutations; combinations; probability; determinants; theory of equations. Prereq., 9. (Offered in St. Paul 1939-40.)

SECOND SEMESTER	
Th	7:00 Campus Main Eng. 106, Edwards

12 Trigonometry. 5 credits. \$17, material fee \$1.

Logarithms and plane trigonometry. Prereq. 9.

FIRST SEMESTER	
T	7:00 Campus Main Eng. 107, Teeter
Th	7:00 St. P. Ext. Center 201, Dow

13 Analytical Geometry, Plane and Solid. 5 credits. \$17, materials fee \$1.

Elements of plane analytical geometry including conic sections, brief introduction to solid analytical geometry. Prereq., Trigonometry.

SECOND SEMESTER	
T	7:00 Campus Main Eng. 107, Teeter
Th	7:00 St. P. Ext. Center 201, Dow

24 Differential Calculus. 5 credits. \$17.

Limit; derivative; simple applications of derivative; maxima and minima; differentials; rates; change of variables; radius of curvature; mean value; indeterminate forms; partial differentiation; series. Prereq., 13.

FIRST SEMESTER	
T	7:00 Campus Main Eng. 106, Edwards

25 Integral Calculus. 5 credits. \$17.

Expansion of function; Taylor's theorem; standard elementary forms; definite integral; rational fractions; integration by substitution, by parts; reduction formulas; integration of processes of summation; successive and partial integration; elementary ordinary differential equations. Prereq., 24.

SECOND SEMESTER

T 7:00 Campus Main Eng. 106, Edwards

Mathematics of Investment. Not offered 1938-39.

MECHANICAL ENGINEERING

M.E. 65-66ex Air Conditioning—First year. 3 credits each semester, toward certificate. \$10, plus \$1 materials fee.

Especially designed for those engaged in selling, installing, or recommending the modern types of appliances for heating, cooling, humidifying, or otherwise conditioning the air of houses and other buildings. Deals with the wants of the human body; the laws of temperature, pressure, humidity, etc.; the methods of heating, cooling, cleaning, and distributing air and the peculiarities of each; testing and measuring pressure, humidity, etc., and the instruments used; critical evaluation of the results of processes. 65 to be completed before registration for 66. Both semesters required to complete the matter outlined, or to receive credit. No prereq. Mimeographed matter and blueprints issued in lieu of a textbook.

FIRST SEMESTER

65 W 7:30 Campus Exp. Eng. 110, Algren, Lund

SECOND SEMESTER

66 W 7:30 Campus Exp. Eng. 110, Algren, Lund

M.E. 67-68ex Air Conditioning—Second year. 3 credits each semester, toward certificate. \$10, plus \$1 materials fee.

The application of the principles of air conditioning to practical problems; the design of systems to meet the requirements of occupied spaces and industrial plants. A continuation of Air Conditioning—First year (M.E. 65-66) which is to be considered prerequisite. Instructor will decide whether students have equivalent preparation. 67 to be completed before registration for 68. Mimeographed material issued in lieu of textbook.

FIRST SEMESTER

67 Th 7:30 Campus Exp. Eng. 110, Algren

SECOND SEMESTER

68 Th 7:30 Campus Exp. Eng. 110, Algren

50a-b Internal Combustion Engines. 3 credits each semester towards certificate only. \$10.

A practical course in theory, construction, testing of gasoline, semi-Diesel and Diesel engines; fuels; combustion; lubrication; cooling and electric systems; carburetors; theoretical and practical engine cycles; use of instruments for determining horsepower, mechanical, and thermal losses in engine operation; laboratory tests. No prereq.

N.B.—Taught jointly with Aero. 2, Aircraft Engines. Students may enter either semester.

FIRST SEMESTER

50a W 7:30 Campus Oak St. Lab.,
Robertson

SECOND SEMESTER

50b W 7:30 Campus Oak St. Lab.,
Robertson

Foundry Practice. 3 credits each semester toward certificate. \$10, plus \$1 materials fee.

A lecture course to supplement the practical work of foundry workers and others interested in the production and use of castings. First semester: Elementary Chemistry, Foundry Materials (properties, composition, use), Foundry Products (cast iron, cast steel, malleable and nonferrous alloys), Molding Problems (gating and heading); second

semester: Elementary Metallurgy (properties of alloys), Standard Specifications and Test Bars, Melting Practice and Furnace Operation, Blueprint Reading and Cost Finding. No prereq.

FIRST SEMESTER
W 7:30 Campus Main Eng. 136, Potter

SECOND SEMESTER
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Diesel Engines (Theory, Construction, and Operation). 3 credits each semester, toward certificate. \$10.

Development of the modern Diesel engine; air injection equipment, mechanical injection pumps, fuel spray nozzles, combustion chamber construction, Diesel power generating plants, high speed Diesels for rail cars, busses, tractors, and aircraft; Diesel fuels and the chemistry of combustion; operating equipment and care. Laboratory demonstrations in second semester. A course for operating engineers and others interested in a broad technical study of the Diesel engine. Two semesters, continuous, both necessary.

FIRST SEMESTER
Th 7:30 Campus Oak St. Lab., Robertson

SECOND SEMESTER
Th 7:30 Campus Oak St. Lab., Robertson

M.E. 27 Machine Design. 3 credits. \$10.

Fundamental principles of design of machine elements; lubrication, theory, and application; friction drives, shafts, screws, gears, belts, connectors, springs, flywheels, machine frames, shrink fits. Prereq. for degree, M.&M. 85 or 128; for noncredit, consult instructor. (Repeated second semester.)

FIRST SEMESTER
W 7:30 Campus Main Eng. 101, Herrick

SECOND SEMESTER
W 7:30 Campus Main Eng. 101, Herrick

METALLOGRAPHY

1-2ex Metallography and Heat Treatment of Iron and Steel. 3 credits each semester, toward certificate only. \$10.

A beginning course suitable for those engaged in practical heat treatment, in writing specifications, purchasing or selling iron or steel; lectures, demonstrations, and laboratory work in pyrometry, thermal analysis, preparation of alloys, microscopic examination of metal alloys, preparation of photo-micrographs: the theory of heat treating, its relation to practice.

FIRST SEMESTER
1ex M 7:30 Campus Sch. Mines 306,
Forsyth

SECOND SEMESTER
2ex M 7:30 Campus Sch. Mines 306,
Forsyth

PETROLEUM PRODUCTS

Petroleum and Petroleum Products. Open to all without credit. \$10.

A practical course for those interested in petroleum. The topics covered will be the origin of petroleum, its chemistry, refining, including processes of cracking and solvent processes; nature and properties of various products and their application; methods of test and their significance.

FIRST SEMESTER
T 7:30 Campus Exp. Eng. 215, Peterson

Testing of Petroleum Products. Open to all without credit. \$10, plus \$5 laboratory deposit, payable at registration.

A laboratory class in testing gasoline, kerosene, gas, oil, lubricating oil, road oil, and asphalt. Includes interpretation of all test results. Unused portion of laboratory deposit to be refunded. For best results should be preceded by Petroleum and Petroleum Products.

SECOND SEMESTER
T 7:30 Campus Exp. Eng. 210, Peterson

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Waldemar Hagen, M.A., Personnel Director

Mabel E. Jackman, B.S., Librarian

Arno J. Jewett, M.A., Instructor in English

Kathryn K. Johnson, B.A., Instructor in Music

Walter Loban, M.A., Instructor in English

Channing MacFadon, M.A., Instructor in French

Eleanor P. Marlowe, M.A., Instructor in Latin

George H. McCune, M.A., Instructor in History

William Micheels, M.A., Instructor in Industrial Education

Margaret D. Nelson, B.S., Instructor in English and Adviser of Girls

Frances Obst, B.S., Instructor in Art Education

Shailer Peterson, M.A., Instructor in Science

Hugh M. Shafer, M.A., Instructor in Guidance

Evelyn Silliman, B.A., First Library Assistant

Margaret S. Textor, B.S., Instructor in English

Frans V. E. Vaurio, B.S., Instructor in Science and Mathematics

Mary Jo Walker, Ph.D., Instructor in French

Virgil Walker, M.A., Instructor in Mathematics

Mabel Wettleson, M.A., Instructor in English and Adviser of Girls

Lucy M. Will, M.A., Instructor in German

Lenore E. Wolfe, B.S., Instructor in English

MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION IN
THE COLLEGE OF EDUCATION

For a complete list of members of other faculties giving instruction in
the College of Education, see the following bulletins:

College of Science, Literature, and the Arts

College of Agriculture, Forestry, and Home Economics

Medical School

Institute of Technology

School of Business Administration

Division of Library Instruction

Institute of Child Welfare

GENERAL INFORMATION

The College of Education is organized to offer professional courses in the field of education, to promote research in the problems of education, and to provide educational guidance for prospective teachers and other educational workers in the schools. The completion of satisfactory curricula in this college entitles graduates to receive certificates for school work from the Minnesota State Department of Education. Such certificates are issued only to those graduating from this college.

Curricula in the College of Education are based on the requirements of the Minnesota State Department of Education. Since requirements for certification vary in the different states, students who desire to teach in states other than Minnesota, should familiarize themselves with the regulations of the state in which they expect to teach.

Among the important curricula offered by the college are those relating to teaching in the following fields: academic subjects in elementary and junior and senior high schools, agriculture, art, business subjects, home economics, industrial arts, music education, natural science, and physical education.

Work is also offered in the fields of library service, school health work, sociology, teaching of subnormal children, work of the visiting teacher, nursery school and kindergarten education, nursing education, and public health nursing.

Five-year curricula leading to the master of education degree are offered in physical education for men and physical education for women.

Undergraduate and graduate courses are available in adult education, agricultural education, clinical psychology, comparative education, educational administration, educational psychology, educational and vocational guidance, elementary education, higher education, history and philosophy of education, home economics education, industrial education, professional education of teachers, secondary education, supervision, theory and practice of teaching, and visual education. For graduate work in education with major emphasis on one of these fields see pages 16-18.

ADMISSION

Admission as regular students.—Admission to regular standing in the College of Education may be effected in one of the following ways:

a. Completion of the requirements for admission to the College of Education as outlined below, or to the junior year of the College of Agriculture, Forestry, and Home Economics. This preparation involves the earning of 90 credits and 90 honor points exclusive of physical education and represents two years of work in a junior college.

b. Graduation from the advanced graduate course of the Minnesota state teachers colleges or of other fully accredited state teachers colleges. The College of Education grants 90 credits to such graduates.

c. Registration in one of the following four- or five-year specialized curricula in the freshman year, provided the requirements for admission to the University have been completed.

FOUR-YEAR CURRICULA

Art Education	Physical Education for Men
Industrial Education	Physical Education for Women
Music Education	

FIVE-YEAR CURRICULA

Physical Education for Men	Physical Education for Women
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In all other cases of four-year curricula as outlined in this bulletin, the prescribed work of the first two years is to be taken prior to the student's entrance to the College of Education.

ENTRANCE REQUIREMENTS

All students who desire to prepare for teaching and who have not enrolled as freshmen in one of the four- or five-year curricula must register in the College of Education beginning with the junior year. They should enroll as pre-education students in the Junior College as early in their course as possible. Advisers for pre-education students will be members of the faculty of the College of Education.

ALL STUDENTS

1. At the time of entrance to the University a student must present a certificate from the Students' Health Service indicating that he is free from physical defects which would prevent him from the successful pursuit of educational work.

2. At the time of entrance to the College of Education the student will be given a general examination designed to show his capacity to pursue professional curricula in education.

3. In the freshman and sophomore years, men must complete three quarters of physical education; women must complete six quarters of physical education. For men 3 credits, and for women 5 credits, to be counted toward graduation from the College of Education, will be granted for the completion of the requirement in physical education. The total number of credits required for graduation will be 183 for men and 185 for women. No credit is granted for physical education in the College of Science, Literature, and the Arts but upon transfer to the College of Education, the student will receive credits and honor points earned in the various courses. Students will receive credit for advanced courses in military science and tactics.

4. Students in the College of Education may elect toward a degree a maximum of 24 hours in military training of which 6 credits are to be in the Basic Course and 18 credits from advanced R.O.T.C. courses.

5. A maximum of 27 credits is elective from courses in agriculture and home economics except in the special curricula in those fields.

STUDENTS IN SPECIALIZED CURRICULA

Students who are following one of the specialized curricula (pages 30-76) in which the work of the freshman and sophomore years is outlined, should present for entrance the Junior College courses prescribed in their curriculum. Two years of work representing 93 credits for men and 95 credits for women carried with an average of one honor point per credit are required. For men 3, and for women 5, of these credits shall be in physical education.

Students with two years of college training who are lacking certain specific Junior College courses may be admitted to the College of Education and will make up all deficiencies after enrolment in the College of Education. Such deficiencies, however, may delay graduation or necessitate extra summer work. All courses of a special curriculum or equivalents should be completed, altho it may not always be possible to complete the courses in the order listed.

STUDENTS WITH TWO YEARS OF WORK AT THE
UNIVERSITY OF MINNESOTA

For students who have taken two years of work in the College of Science, Literature, and the Arts or equivalent work in a liberal arts college or junior college, entrance to the College of Education will be conditioned upon meeting the general and specific requirements outlined below:

1. A minimum of 93 credits for men and 95 credits for women carried with an average of one honor point per credit. For men 3, and for women 5, of these credits shall be in physical education. The remaining 90 credits shall be earned in the following groups of college courses:

- Group A English
- Group B Foreign languages: Classics, German, Romance Languages, Scandinavian
- Group C Social sciences: Anthropology, Economics, Geography, History, Political Science, Sociology
- Group D Natural sciences: Astronomy, Botany, Chemistry, Geology and Mineralogy, Physiology, Physics, Psychology, Zoology
- Group E Mathematics
- Group F Journalism, Philosophy, Speech, Fine Arts, or such courses in other colleges or departments of the University as are approved by the College of Education

2. Within the general requirements listed above the student during his high school and Junior College years must have completed the required work indicated under A, B, C, and D below, and at least 20 credits in Groups B, C, and D must be completed in college.

SUBJECT	IN HIGH SCHOOL	IN COLLEGE
A. English	3 years	and 9 credits in composition
B. Language	3 years in one language	or 20 credits in one language
	or	
	2 years in one language	and 10 credits in same language
C. Social sciences	or	
	1 year in one language	and 15 credits in same language
D. Natural sciences	2 years	or 10 credits in one department
	2 years	or 10 credits in one department

NOTE.—In lieu of the specific course requirements indicated in the language group a student may elect a comprehensive examination in a chosen language to be conducted by a committee appointed by the dean of the College of Education.

3. Within the total credits stipulated under No. 1 a student must meet, in fields of study which are represented in prevailing high school curricula, the following requirements: at least 15 credits in a major field and at least 10 credits in each of two minor fields. The purpose of this requirement is to prepare the student for the study of the advanced courses necessary to the completion of satisfactory teaching majors and minors.

4. The student must have completed 6 credits in general psychology.

5. Men must have completed 3, and women 5, credits in physical education.

6. Students with two years of college training who are lacking certain entrance requirements may be admitted to the College of Education and will make up all deficiencies after enrolment in the College of Education.

7. Students admitted on probation are subject to the rule regarding evaluation of credits. (See page 10.)

Students in Agriculture and Home Economics.—Students expecting to receive certificates to teach upon graduation shall be registrants in the College of Education beginning with the junior year. Students in the College of Agriculture, Forestry, and Home Economics desiring a teacher's certificate in home economics or in agriculture shall, in addition to their registration in that college, register also in the College of Education. No formal application for transfer is necessary if such transfer is made at the beginning of the junior year. At least 90 credits, and honor points equal to the number of credits are required for admission to the junior class.

Students from the General College are admitted provisionally pending completion in a satisfactory manner of one year's work. (See page 10.)

STUDENTS FROM OTHER COLLEGES

Students who transfer from other colleges with advanced standing are required to complete the work of the freshman and sophomore years as outlined in their curriculum or as outlined above in Junior College requirements (pages 8-9). However, students who have had two full years of college work but lack specific entrance requirements, may register in the College of Education and make up deficiencies after enrolment in the college. Such deficiencies may delay graduation or necessitate extra summer work.

New Students' Committee.—The faculty of the College of Education maintains a New Students' Committee, the duties of which are to assist students transferring from other colleges with advanced standing. Students in the special fields may secure help from the heads of their own departments in Physical Education, Art Education, Music Education, and Child Welfare. All academic majors in such fields as social studies, English, languages, or science, should communicate with Miss Dora V. Smith, 206 Burton Hall, who is chairman of the committee. Instructions for Freshman Week and information concerning registration procedures and the location of major advisers will be mailed to advanced standing students on request. A transfer students' booth for the purpose of giving information during Freshman Week is maintained by upper classmen in the upstairs rotunda of Burton Hall.

Admission on probation.—Students with advanced standing who wish to enter the College of Education are admitted on probation if the average of

the grades presented for admission is below that of the average mark required for graduation in the college from which they enter.

Evaluation of advanced standing credits.—All advanced standing is assigned provisionally only, pending the completion in a satisfactory manner of one year's work. The College of Education defines satisfactory as meaning an average of *C* (an average of 1.00 honor point per credit) or better (see page 13).

At the completion of one year's work a transfer student earning an honor point average of 1.00 shall be given all his transferred credits.

Any transfer student who at the completion of one year's work has earned an average of less than *one honor point per credit* shall be given transferred credits in amount determined by multiplying the number of transferred credits by the average honor point earned. For example, a student who presents 80 transferred credits and who during his first year here earns an average of .75 honor points will be given .75 of 80, or 60, transferred credits.

Transfer students who fail in their first year's study at the University to make an honor point average of 1.00, and therefore lose advanced standing credits, may have them all restored when and if at some later date the average honor point ratio is as much above 1.00 as the first year's honor point average was below 1.00. For example, a transfer student who in his first year's work makes an honor point average of .75 and thereby forfeits one fourth of his advanced standing credits, may have his forfeited credits restored when the honor point ratio for all his work at Minnesota is 1.25.

Evaluation of transferred credits will be made after three quarters residence as a full-time student. As a basis for evaluation not less than 40 nor more than 50 Minnesota credit hours will be used in determining the honor point ratio.

Prerequisites for senior work.—Students who transfer with three years of college work approximating 135 credits, must have had courses equivalent to Ed. 51A-B-C, Introduction to Secondary School Teaching, and be able to pass the qualifying examinations (see page 12) in order to complete the work for a degree in one school year.

STUDENTS FROM SCHOOLS OF NURSING

Students who specialize in nursing education or public health nursing and who desire a teacher's certificate register in the College of Education for the last 45 credits of work. A student who enters the University as a freshman spends five quarters in the College of Science, Literature, and the Arts, earning 75 credits. During the next ten quarters the student is registered in the School of Nursing taking required subjects and nursing practice. During the last three quarters the student is registered in the College of Education. For detailed statement see pages 54-58.

STUDENTS FROM TEACHERS COLLEGES

Graduates from the standard two-year course of the Minnesota state teachers colleges and of other fully accredited teachers colleges are admitted

to the College of Education with 90 blanket credits. These credits are accepted in lieu of the Junior College requirements listed above but a student in a specialized field will be held for all the work of his curriculum.

Graduates of the three-year course in the state teachers colleges of Minnesota may receive not more than 113 quarter credits; credits earned in such three-year normal course shall be applied, in case they are deemed of equivalent merit, in the College of Education, to courses for supervisors in elementary grades, principals in state graded schools, teachers in junior high schools, or in normal school departments in high schools; students coming from such three-year course shall not receive certificates in high school subjects from the University without completing the prescribed courses of the University for such certificates or their equivalents.

Students who transfer from the third or fourth year of the degree course offered in Minnesota teachers colleges may receive credit for any part of their work in so far as such work is equivalent in subject-matter to courses offered in the College of Education.

Graduates of a five-year normal course, if individually recommended by the normal school president, are allowed 63 quarter credits and are admitted as unclassified students pending the completion of 27 additional credits.

Teachers of experience who are unable to meet the regular requirements for admission are admitted to the College of Education as unclassified students.

Graduates of state teachers colleges will not be permitted to take for credit, Psy. 1-2, General Psychology. Graduates of state teachers colleges should not take Ed. 61A-B-C without special permission.

STUDENTS WITH A BACHELOR'S DEGREE

Students who already have earned a Bachelor's degree in some other college and desire to complete their preparation for teaching and qualify for a teacher's certificate, may do so by completing one year's work and earning a minimum of 45 credits. Such students register in the course Ed.W., Professional Preparation for Teaching, and plan a year's program in conference with the course adviser. Students in Ed.W. are relieved of prerequisites and requirements which otherwise would delay their preparation for teaching. All units of the course, totaling 45 credits, must be completed. Students who complete the course receive the bachelor of science degree and are entitled to certification by the Minnesota State Department of Education.

RESIDENCE REQUIREMENTS

The minimum term of residence in the College of Education is two years beginning as soon as the entrance requirements have been fulfilled.

Students may shorten the two years of residence only by meeting such additional requirements in quality and quantity of professional work as will make the training of such students equal to that of students regularly registered for two full years.

The required courses in education are arranged in a sequence for the junior and senior years and cannot be completed in less time except in un-

usual cases or by extra summer work. Students who have not completed the junior courses by the opening of the fall quarter will not, as a rule, be admitted to senior work.

A minimum of 45 credits in residence is required for graduation. Students who transfer from other colleges with three or more years of work receive a maximum of 135 credits. Students who transfer with 135 credits must, as a rule, enter in the fall and be able to pass the qualifying examinations at entrance, in order to graduate in three quarters.

QUALIFYING EXAMINATIONS—REQUIREMENTS FOR REGISTRATION FOR THE SENIOR YEAR

Registration for the work of the senior year in the College of Education is provisional pending satisfactory performance upon the qualifying examinations as outlined below. By the close of the junior year students should have completed courses in their respective majors which are fundamental preparation for these examinations as outlined in a booklet of the College of Education entitled *The Qualifying Examinations*.

The qualifying examinations consist of four sections:

1. A. Teaching major—materials usually taught in secondary schools.
B. Additional phases of the major field taught in college courses.
2. Fundamentals of educational psychology, secondary education, and methods or techniques of instruction.
3. English form and composition.

Students not preparing to work in secondary schools will be permitted to take an alternative form of the examination in education which deals with elementary education and methods of teaching in elementary schools.

No registration for student teaching or other work of the senior year will be regarded as completed until these examinations have been taken.

Statements of the scope of these examinations are on file at the reserve desk of the University Library. Booklets giving the scope of these examinations may be obtained at the office of the dean of the College of Education.

These examinations are now given toward the close of each quarter and students whose senior year or first enrolment in student teaching falls in the fall quarter will take the examinations some preceding quarter, usually the spring quarter.

Qualifying examinations are also given the first week of the first summer term for summer school students who expect to take directed teaching or practice supervision during the Summer Session, for students who were not enrolled during the spring quarter, and for students who wish to retake examinations in which they have failed.

Qualifying examinations are also given on Thursday and Friday of the week preceding the beginning of classes in the fall. Only (1) senior students transferring from other colleges or universities, (2) students in certain specialized curricula, (3) students who wish to retake examinations in which

they have failed, and (4) students who have been enrolled in one or both of the summer terms are eligible to take the examinations at this time. Papers of others will not be scored.

Students entering the College of Education at any time other than the fall of their junior year should consult an adviser in regard to the qualifying examinations and admission to methods and directed teaching.

GRADES, CREDITS, AND HONOR POINTS

Grades.—The Senate regulations governing the system of marks is as follows:

1. That there shall be four grades, A, B, C, and D, representing varying degrees of achievement, which shall be acceptable for the completion of a single course; but this definition shall not be construed as preventing any college or school from setting special standards of performance as a condition of registration in particular courses of study, of admission to the college or school, of promotion, of counting work toward a degree, or of continued residence in the college or school. Work merely acceptable for the completion of all his single courses of study does not constitute a satisfactory record for a student when his college specifies higher requirements for any purpose.

2. There shall be two grades indicating work of distinctly unsatisfactory quality. These grades shall be known as E (condition), which may be removed by examination or other means stipulated by the faculty of the college or school concerned, and F (failure), which may be removed only by a repetition of the work in the course, or, in exceptional cases, by examination by permission of the faculty concerned.

3. There shall be a Grade I (incomplete), which shall indicate that a student, for reasons satisfactory to the instructor in charge, shall have been unable to complete the work of the course. This grade shall be given only when the work already done has been of a quality acceptable for the completion of the course. Any student receiving this grade shall be given an opportunity to complete the said course within the first thirty days of his next quarter in residence.

4. There shall be a symbol, T (transferred), indicating the transfer of credit from another institution or from one college to another of the University of Minnesota. This symbol shall be provisional and subject to final evaluation by the faculty of the college or school to which the student is transferred.

The amount of work pursued by a student is estimated in credit hours; the quality or grade of his work, in honor points.

A *credit hour* is one hour per week of recitation or lecture work extending throughout one quarter, or three hours per week of laboratory work through one quarter. It is assumed that each credit hour will demand on the average three hours a week of the student's time for recitation or lecture, one hour in class and two hours of preparation; for laboratory courses, three hours in the laboratory.

Honor points are computed as follows: each credit hour with the grade of A entitles the recipient to 3 honor points; each credit hour with the grade of B to 2 honor points; each credit hour with the grade of C to 1 honor point; each credit hour with the grade of D to no honor points. Illustration: A student completing a one-quarter 3-credit course and receiving the grade of A would be entitled to 9 honor points; if receiving the grade of B, to 6 honor points; if receiving the grade of C, to 3 honor points; if receiving the grade of D, to no honor points.

AMOUNT AND QUALITY OF WORK

a. Upon entering the College of Education the student should, under advisement, (1) plan his program to secure one academic major and one or more academic minors and the required professional courses;* or (2) he should plan his program in accordance with one of the specialized curricula.

b. During his entire course the student must earn (1) 183 credits if a man or 185 credits if a woman, including the required courses in physical education, or a smaller number of credits determined as follows: For every 5 honor points in excess of one honor point per credit the number 183 or 185 is diminished by one, but no student will be recommended for graduation who has not completed all of the courses required in his particular curriculum and who has not satisfied all the requirements of his curriculum; (2) $1\frac{1}{2}$ honor points per credit or an honor point ratio of 1.5 in his *major subject*; and (3) an average of 1 honor point per credit or an honor point ratio of 1.0 in *all other courses* pursued during the junior and senior years.

c. Fifteen credits are regarded as the usual load. Students who register for more than 17 hours should have a record of $1\frac{1}{2}$ honor points per credit for the previous quarter. Students may be required to cancel one or more courses if their load is too heavy or their record is unsatisfactory.

d. All students registered in the College of Education shall maintain satisfactory standards of oral and written English. A Committee on Standards of English in Education will recommend ways of remedying deficiencies and will determine when satisfactory standards have been attained.

e. Students registered as freshmen and sophomores in the College of Education will be guided by the faculty regulations of the College of Science, Literature, and the Arts, but will be amenable to the Students' Work Committee of this college.

f. Students who register in specialized curricula in the freshman and sophomore years must have an average of one honor point per credit, or an honor point average of 1, for the first two years before they are admitted to junior work.

Honor points in the major.—Honor points are computed on the basis of one and one-half times the number of credits required in the major subject, e.g., in case a major recommendation requires 36 credits, the number of honor points will be 54. From among the courses carried in a department the student may select those which he will present as meeting this requirement except that he must include all courses which are specified in the departmental announcement as required for the recommendation for the certificate.

UNSATISFACTORY WORK

Continued residence in the college is conditioned upon reasonable success in the student's work and progress toward graduation. Any student who does not make satisfactory progress in the course in which he is regis-

* For requirements in Education see pages 21-22.

tered may be placed on probation by the Students' Work Committee. No student is considered to have a satisfactory standing who fails to secure in the course of any year the normal advance of one honor point for each credit for which he is registered and $1\frac{1}{2}$ honor points for each credit earned in his major subject.

Grades of D, E, and F are considered unsatisfactory. A student who is found to have unsatisfactory marks in 50 per cent of his work at the end of any quarter will be placed on probation.

If he fails to make satisfactory marks in more than 50 per cent of his work the following quarter, he is eligible to be dropped. Only in exceptional cases will such a student be allowed to continue in the College of Education.

Any student who has been on probation for more than one quarter and who fails to make an average of one honor point per credit may be dropped by the Students' Work Committee. See also rule for evaluation of credits, page 10.

GRADUATION—DEGREES—HONORS

The degree of bachelor of science.—Students graduating from the College of Education will receive the degree of bachelor of science. A total of 183 credits and 183 honor points for men and 185 credits and 185 honor points for women is required for graduation. Candidates for this degree must (a) have met the requirements in a major and in a minor field and in professional subjects, or (b) they must have completed one of the specialized curricula. In addition they must have met the special scholarship requirements as stated on page 14. Candidates may major in any department listed on page 20.

Graduation with high distinction.—All graduates of this college who have attained *special excellence* in scholarship as evidenced by an honor point ratio* of 2.5 or more are candidates for the degree of bachelor of science *with high distinction*. This award is not automatic but is conditioned upon favorable recommendations of the faculty and is conferred by faculty action only. Other conditions that influence the award are the amount of advanced work taken by the student, the percentage of work taken at the University of Minnesota, evidence of ability to do independent work, and other conditions affecting scholastic standing.

Graduation with distinction.—All graduates of this college who have attained *excellence* in scholarship to the extent of having earned an average honor point ratio* of 2.0 or more are candidates for the degree of bachelor of science *with distinction*. This award is not automatic but is conditioned upon favorable recommendations of the faculty and is conferred by faculty action only. Other conditions that influence the award are the amount of advanced work taken by the student, the percentage of work taken at the University of Minnesota, evidence of ability to do independent work, and other conditions affecting scholastic standing.

* The honor point ratio is calculated by dividing the total number of honor points earned by the total number of credits earned. See p. 13.

INDEPENDENT STUDY COURSE

An Independent Study Course will be offered during the year 1938-39.

1. The purpose of this course will be to offer students of ability the opportunity to direct their own training to a greater degree than is now afforded by the prevailing methods of class instruction.

2. The course will be open by choice to those students who by tests of general ability and previous scholastic achievement give evidence of the capacity for self-direction. Continuance in the course will be conditioned by continued evidence of worthiness of such enrolment.

3. This course will be in lieu of the requirements of Educational Psychology, the Technique of High School Instruction and the High School, and is equivalent to Ed. 51A-B-C. The field of work to be covered will be approximately that now embraced in the three courses. Students who satisfactorily complete this Independent Study Course and the final examination covering all units, will be given nine credits and will be relieved of the special course requirements named above.

4. Students electing the Independent Study Course will be relieved from certain formal requirements but not from the mastery of a minimum content.

MASTER OF EDUCATION DEGREE

The College of Education grants the professional degree of master of education to students who satisfactorily complete the prescribed five-year programs in Physical Education for Men and Physical Education for Women. Students register in these curricula at the beginning of the freshman year. In most cases the student who already has a Bachelor's degree in the field, may qualify for the degree of master of education by completing all the requirements of the fifth year. The specific requirements of each program are listed under the specialized curricula.

GRADUATE WORK IN EDUCATION†

Graduate work in education leading to the degree of master of arts or doctor of philosophy may be pursued in the Graduate School. All courses bearing numbers of 100 and above (with the exception of those designated by a capital "E") are open for credit to graduate students. Before attempting to make out their programs, graduate students in education should consult the dean of the College of Education and the dean of the Graduate School.

Graduate courses may be pursued during the Summer Session. The work for the Master's degree may ordinarily be completed in three or four Summer Sessions. For full statement of regulations, consult the Bulletin of the Graduate School.

Prerequisites for graduate work in education.—For major work the prerequisite is at least 6 quarter credits in psychology and in addition to this a total of not less than 18 quarter credits of undergraduate work in education

† For complete description of graduate work in education see the Bulletin of the Graduate School.

which shall include Ed.51A-B-C or Ed. 61A-B-C or the equivalent. For minor work at least six quarter credits in psychology and in addition to this, a total of not less than 18 credits of undergraduate work in education is required.

Exemption from the language requirement for the Master's degree may be made in individual cases.

Seminar courses are conducted primarily for students preparing theses for the Doctor's degree or for the Master's degree, Plan A. As a rule, seminar courses do not carry credit.

MAJORS AND MINORS

Major and minor work for advanced degrees may be arranged from courses listed below under the following groupings:

Doctor's Degree

Major.—Major work will be chosen in the field of education in the following manner. With the approval of his adviser the student will select a group of courses, excluding the field of his minor, centering about his special interest in education. The center of interest may be determined in either of three ways:

1. By reference to problems of general education.
2. By a more limited grouping as determined by special subject-matter content.
3. By the type of educational institution to which courses relate.

Under the second grouping the following are acceptable as typical centers of interest:

Agricultural education	History and philosophy of education
Curriculum and instruction	Home economics education
Educational administration and supervision	Industrial education
Educational psychology	

Under the third method of grouping courses typical centers of interest will be as follows:

Elementary education
Secondary education
Higher education

Minor.—Minors may be designated as follows:

1. Any other field of study offered in the University of Minnesota in which satisfactory courses of graduate character are available and which is obviously related to the field of major interest.
2. Students majoring in fields other than education may choose education or any of its subdivisions enumerated above as a minor when it appears that such a minor is appropriately related to the major field.

Master's Degree—Plan A

Major.—Majors may be chosen as follows:

Education.—Under this designation the student, with the approval of his adviser, may select a group of courses from among those listed below

(see pages 77 to 113) excluding the field of his minor, centering about his special interest in education. The center of interest may be determined by subject-matter content or by the type of educational institution to which courses are related. Typical centers of interest are the same as those listed under Doctor's Degree above.

Minor.—Minors may be chosen from any of the groupings of courses enumerated above when such grouping is not included in the major or from any other field of study offered at the University of Minnesota in which satisfactory courses of graduate character are available and which is obviously related to the major field.

Students majoring in fields other than education may choose education or any of its subdivisions enumerated above as a minor when it appears that such a minor is appropriately related to the major field.

Thesis.—Candidates for a Master's degree under Plan A are required to submit a thesis.

Master's Degree—Plan B

Field of concentration.—Under Plan B, which encourages a wider selection of courses, the student will be expected to select a field of concentration in which he will attain the required number of course credits. The field of concentration differs from the major in that it encourages the choice of a somewhat wider range of courses related to the student's interest. As in the case of the major, however, the student will be expected to indicate his field of concentration according to the general arrangement of courses that prevails for the requirement of a major. This arrangement is as listed under Doctor's Degree above.

Additional courses.—The student may elect the additional courses required to complete the total of 45 credits from an area of education not included in the field of concentration or from any other field of study offered at the University of Minnesota in which satisfactory courses of graduate character are available and which is obviously related to the student's interest.

Independent study in starred courses.—Candidates for the Master's degree under Plan B are expected to earn 9 credits in courses involving independent study. This requirement will be satisfied by earning 9 credits in problem courses and other courses involving the preparation of a paper representing independent work and of the form and standard but not the extent of the thesis required under Plan A. Courses in which such credits may be earned are designated with an asterisk on pages 77-113. Credits in other courses may not be used to satisfy the requirement of independent study.

Education courses are grouped with a view of bringing together those of related content. It is not intended, however, that this grouping shall be followed explicitly in the determination of majors, minors, or fields of concentration. The student will be free to determine, within limits approved by his adviser, the arrangement of courses that he wishes to offer for satisfying major, minor, or field of concentration requirements.

BUREAUS OF RECOMMENDATIONS AND RESEARCH

Bureau of Recommendations.—Graduates of the College of Education who have met the requirements for a state teacher's certificate will be recommended for positions for which they are qualified. Students on the Minneapolis campus should register with the Bureau of Recommendations, 208 Burton Hall.

Bureau of Educational Research.—The College of Education conducts a Bureau of Educational Research for the purpose of promoting investigations by faculty and students in problems of education. The bureau is under the direction of the dean of the college and the members of the faculty co-operate as their several interests dictate. Through the bureau, opportunity is given for co-operation with public schools in studies bearing upon problems of school administration, classroom instruction, and related matters. The bureau is responsible for the publication of a series of studies under the general title of Educational Monographs.

SPECIAL FEES

All special methods and directed teaching courses carry a fee of \$1 per credit hour. Certain courses in the various departments require the payment of special fees. Such fees are indicated in connection with the course descriptions in this bulletin and with the schedules of courses as listed in the College of Education section of the Combined Class Schedule. For a statement of tuition and other fees see the Bulletin of General Information.

PROFESSIONAL LECTURES

From time to time during the year lectures of general interest to students of education will be given by members of the faculty and invited speakers. All students in the College of Education are expected to attend these lectures. Special announcements will appear in the Official Daily Bulletin.

CONFERENCES FOR STUDENT TEACHERS

Conferences for student teachers are arranged during the school year by the director of student teaching. Such conferences are a part of the required work in all courses that include directed teaching and practice work. Discussion centers around professional topics and problems of interest to student and beginning teachers. Detailed announcement of the series is made at the opening of the fall quarter.

CERTIFICATION OF TEACHERS

Employment in a professional capacity in the schools of Minnesota is conditioned upon the proper licensing of the person to be employed. By a law enacted in 1929 all authority for such certification is conferred upon the State Department of Education. Certification by institutions and the university teacher's certificate have been discontinued. Within the scope of this law the University operates its program for those students who desire certification for teaching in the public schools of this state.

The law provides that certification is automatic for the graduates of the College of Education who have completed specifically named curricula in this college. No provision is made for the certification of any other university graduates. Certificates may be issued only to those persons who are "physically competent and morally fit to teach." The various curricula in the College of Education provide the training necessary for any type of state certificate which is based upon four or five years of training beyond the high school.

Four-year programs of study which provide the training necessary for holding positions in the public schools of Minnesota are offered in the following subjects:

Agriculture	Music Education
Art Education	Natural Science
Botany	Nursery School and Kindergarten Education
Chemistry	Nursing Education
Commercial Education	Physical Education for Men
Elementary Education	Physical Education for Women
Elementary School Supervision	Physics
English	Political Science
French	Public Health Nursing
Geography	Recreational Leadership
German	Scandinavian
History	Social Studies
Home Economics	Sociology
Industrial Education	Speech
Junior High School Education	Speech Pathology
Latin	Teaching Subnormal Children
Library Methods	Zoology
Mathematics	

Students who desire certification upon graduation shall be registrants in the College of Education beginning with the junior year. Students in home economics and agriculture shall also be registrants in the College of Agriculture, Forestry, and Home Economics. They shall have satisfied the prescribed requirements for a major and a minor in secondary school subjects or the specific requirements of a specialized curriculum as outlined in this bulletin. Such students will also be required to complete the two years' work leading to the degree of bachelor of science. No certificate is granted without a degree from the University of Minnesota.

By a proper selection of courses students qualifying for the degree of bachelor of science may qualify for teaching in more than two fields. This is desirable since most beginning teachers in public schools are required to teach several subjects.

Because the regulations and requirements in subject-matter fields and in education necessary for certification in different states are constantly changing, students who plan to teach in states other than Minnesota should consult their major advisers in order that they may fully complete the requirements for the specific state in which they wish to teach.

GENERAL REQUIREMENTS

FOR TEACHERS OF SECONDARY SCHOOL SUBJECTS

In order to receive the Bachelor's degree and to qualify for the Minnesota state high school standard certificate in secondary school subjects, students not completing a specialized curriculum as set forth in this bulletin will meet the following requirements:

- A. One academic major.
- B. One or more academic minors.

Majors and minors must be selected from the subjects commonly taught in high schools. Students should elect majors and minors early in their college course and with regard to the demands of high schools. By careful selection of courses students may complete two or more minors thus qualifying them to teach in several different fields. The following pages list the fields in which majors and minors are offered and the requirements in each field.

- C. Professional courses totaling 26 credits.

The student preparing for high school teaching in academic subjects must meet the following professional requirements:

1. *Required course—General.*—Ed.51A-B-C (formerly Ed.51-52-53). Introduction to Secondary School Teaching. (9 cred.; prereq., Psy. 1-2.)

This course consists of work in educational psychology, high school administration, and the technique of high school instruction.

2. *Methods and practice teaching.*—In addition the student must complete a *Special Methods and Directed Teaching Course* (9 cred.; prereq., Ed.51A-B-C and passing the qualifying examination) in his major field and a course in Special Methods in his minor field (3 cred.; prereq., Ed. 51C and passing the qualifying examination).

3. *Education electives.*—To complete the professional requirement of 26 quarter credits required for this degree and the teacher's certificate the candidate will elect additional credits, under faculty advisement, from among the following subjects:

Course No.	Title	Credits	Prerequisite Courses
Ed. 71	Brief Course in History of Education ...	5	Psy. 1-2
Ed. 73	Educational Sociology	3	Psy. 1-2
Ed. 75	Public Education in the U. S.	3	Psy. 1-2
Ed. 101	Historical Foundations of Modern Education	3	Psy. 1-2
Ed. 102	History of Modern Secondary and Higher Education	3	Psy. 1-2
Ed. 103	History of Modern Elementary Education	3	Psy. 1-2
Ed. 131	Comparative School Systems	3	9 hrs. in ed.
Ed. 133	Guidance in Secondary Schools	2	9 hrs. in ed.
Ed. 167	The Junior High School	2 or 3	9 hrs. in ed.
Ed.C.I. 113	The High School Curriculum	2 or 3	9 hrs. in ed.
Ed.C.I. 119	The Elementary School Curriculum	3	9 hrs. in ed.

Course No.	Title	Credits	Prerequisite Courses
Ed.C.I. 121	Educational Advising of Women and Girls	3	15 hrs. in ed. and psy.
Ed.C.I. 122	Literature for Adolescents	2	See departmental statement
Ed.C.I. 135	Teaching of Occupations	2	9 hrs. in ed.
Ed.C.I. 169	Extra-curricular Activities	2 or 3	9 hrs. in ed.
Ed.Ad. 124	Public School Administration	3	10 hrs. in ed.
Ed.Psy. 120	Basic Principles of Measurement	2 or 3	Ed.Psy. 60 or equiv.
Ed.Psy. 140	Construction and Use of Educational Tests and Examinations	3	Ed.Psy. 120 or equiv.
Ed.Psy. 146-147	Child Guidance	4	15 hrs. in psy. and ed.
Ed.Psy. 157	Psychology of Child Development	2	6 hrs. in psy.
Ed.Psy. 158	Psychology of Adolescence	3	Ed. 51A or equiv.
Ed.Psy. 159	Personality Adjustments in Education	2 or 3	Ed. 51A and 116 or parallel
Ed.Psy. 183	Psychology of Gifted Children	2 or 3	Ed. 51A or equiv.
ArtEd. 189	Application of Esthetic Theory to Art Education	3	See departmental statement
Ind. 105	Industrial Education	3	See departmental statement
Ind. 110	Guidance in the Schools	2 or 3	Ed. 51A
P.M.&P.H. 59	Health Supervision of the School Child	3	P.M.&P.H. 50 or 52 or 53

DIRECTED TEACHING*

Special methods and student teaching are normally combined into a one-year course extending throughout the senior year. Failure to register for such course for the fall quarter of the senior year will probably result in delay in graduation. All courses prerequisite to special methods and practice teaching, including the final examination in Ed. 51A-B-C and the qualifying examination, should have been completed by the beginning of the senior year. In addition to the special methods and practice teaching course in the subject which the student wishes to teach he must satisfy the requirements for a major or minor in that subject according to his curriculum. By the beginning of his senior year he should have made adequate preparation, particularly in his major teaching field, for successful directed teaching in high school classes. As evidence of adequate preparation, the students planning to do student teaching must pass all four qualifying examinations (see page 12). Registration for courses involving student teaching, practice supervision, or applied field work of any sort before passing these examinations is invalid.

Arrangements for directed teaching should be made at the close of the junior year and before the student registers for other courses. In the academic subjects arrangements should be made through Mr. William S. Carlson, director of student teaching, and in the special subjects through the major advisers.

* See departmental statement, *Methods and Directed Teaching*, pages 99-102.

MAJORS AND MINORS IN ACADEMIC SUBJECTS

BOTANY

Major Adviser: F. K. Butters

For curriculum in natural science, see pages 53-54.

Botany as a major subject:

Course No.	Title	Credits
Bot. 1	General Botany	4
Bot. 2	Elementary General Morphology of Plants	3
Bot. 5	Elementary Plant Histology	3
Bot. 7	Taxonomy of Flowering Plants	3
Bot. 21	Elementary Ecology	3
Bot. 22	Elementary Plant Physiology	3
Bot. 61	Thallophytes	3
Bot. 62	Bryophytes and Pteridophytes	3
	Additional credits	5
Total credits		30

Botany as a minor subject:

Bot. 1, 2, 7, 21, 22 and 3 additional credits.

CHEMISTRY

Major Adviser: Palmer O. Johnson

For curriculum in natural science, see pages 53-54.

Chemistry as a major subject:

Course No.	Title	Credits
Inorg. Chem. 9-10	General Inorganic Chemistry	10
Inorg. Chem. 12	Qualitative Chemical Analysis	5
Anal. Chem. 7	Quantitative Analysis	4
Org. Chem. 51-52	Organic Chemistry	10
	Additional credits	10

Chemistry as a minor subject:

Inorg. Chem. 9-10, 12; Anal. Chem. 7; six additional credits in chemistry.

Students without entrance credits in chemistry register for Inorg. Chem. 6-7, 8 instead of 9-10.

ENGLISH

Major Advisers: C. W. Nichols, Dora V. Smith

English as a major subject:

Course No.	Title	Credits
Eng. 22-23	Introduction to Literature	10
Eng. 55-56	Shakespeare	6
Eng. 73-74	American Literature	6
Comp. 27-28	Advanced Writing	6
Speech 1-2	Fundamentals of Speech	6
	Additional credits, all of which must be secured in courses numbered 100 or above	6
Total credits		40

English as a minor subject:

Eng. 22-23	Introduction to Literature	10
Eng. 55-56	Shakespeare	6
Eng. 73-74	American Literature	6
Comp. 27-28	Advanced Writing	6
Total credits		28

GEOGRAPHY

Major Adviser: D. H. Davis

For curriculum in social studies, see page 71.

Geography as a major subject:

Twenty-eight credits from the following courses:

Course No.	Title	Credits
Geog. 11	Human Geography	5
Geog. 41	Geography of Commercial Production	5
Geog. 43	Political Geography	5
Geog. 47	Geography of Minnesota	3
Geog. 53	Historical Geography of North America	3
Geog. 71	Geography of North America	3
Geog. 101	Geography of Europe	3
Geog. 102	Trade Routes and Trade Centers	3
Geog. 110	Geography of South America	3
Geog. 111	Cartography and Graphic Representation	3
Geog. 120	Geography of Asia	3
Geog. 133	Climatology	3
Geog. 241	Field Course	3
Geog. 251- 252-253	Seminar in Geography	3

Five or six additional credits from the following courses in geology:

Geol. 1-2	General Geology (Dynamic and Historical)	6
Geol. 1-3	General Geology (Dynamic and Economic)	6
Geol. 8	Introductory Geology	5
Total credits, minimum		33

Geography as a minor subject:

Eighteen credits selected from the following courses:

Geog. 11 or 41 (preferably 11), 53, 71, 101, 102, 110, 120

GERMAN

Major Adviser: O. C. Burkhard

German as a major subject:

Course No.	Title	Credits
Ger. 50-51-52	Composition†	6
Ger. 53-54-55	Conversation	3
Ger. 56-57	Essay Writing	6
Ger. 68	Survey of German Literature	3
Ger. 108	Phonetics	3
Additional credits in courses numbered above 40		15
Total credits		36

German as a minor subject:

Ger. 50-51-52	Composition†	6
Ger. 108	Phonetics	3
Additional credits in courses numbered above 40		8
Total credits		17

† Prerequisite, Ger. 4 or four years preparatory German.

HISTORY

Major Adviser: A. C. Krey

For curriculum in social studies, see page 71.

History as a major subject:

Total number of credits 45

At least 18 credits must be in Senior College courses. In the senior year students, if they have maintained to the end of the junior year an honor point average of 1.5 in all work and an average of 2.0 in courses in history taken after the freshman year, may take at least one course numbered above 150; all other majors will take an additional survey course in the senior year, but will not take a course numbered above 150.

History as a minor subject:

A minimum of 18 credits of which no fewer than 9 are in Senior College courses.

No major recommendation to teach history will be given unless the student has taken at least the general course in American History. Hist. 7-8-9.

JOURNALISM

Major Adviser: Ralph D. Casey

Journalism as a minor subject:

Course No.	Title	Credits
Jour. 13	Introduction to Reporting	3
Jour. 41	Editing for Non-Majors	3

Twelve credits in Senior College courses, including Jour. 69 and 82, and 6 additional credits in Senior College courses. Course 109-110 is recommended. Ed.T. 74, Teachers' Course in Journalism, is also required.

LATIN

Major Adviser: Marbury B. Ogle

Latin as a major subject:

Eighteen credits including:

Course No.	Title	Credits
Lat. 73-74-75	Prose Composition	3
Lat. 111-112-113	Advanced Prose Composition	3

Additional courses in Latin including two with numbers between 50 and 100 and two with numbers above 100.

Latin as a minor subject:

Nine credits including Lat. 73-74-75 and any two courses with numbers above 50.

Sequence of courses in Latin.—Students who have had no Latin in high school will take Courses 1, 2, 3, 11, 12, and any course numbered between 50 and 100. Students entering the University with one year of high school Latin will take Courses 2, 3, 11, 12, and any course numbered between 50 and 100. Students entering with two years of Latin will take 11, 12, and any course numbered between 50 and 100. Students entering with three years of Latin will take 12, and any course numbered between 50 and 100. Students with four years of high school Latin will take 73-74-75 and any two courses numbered between 50 and 100.

MATHEMATICS

Major Adviser: A. L. Underhill

Mathematics as a major subject:

Prerequisite courses: Solid Geometry (entrance credit or its equivalent);† Higher Algebra taken either in high school or college. Mathematics 20 (The Mathematics of Investment) is strongly recommended as an elective.

Course No.	Title	Credits
Math. 6	Trigonometry	5
Math. 7	College Algebra	5
Math. 30	Analytic Geometry	5
Math. 50	Calculus I	5
Math. 51	Calculus II	5
Additional credits in courses numbered over 51.....		8
Total credits		33

The Qualifying Examination 1B in Mathematics covers the content of Mathematics 6, 7, 30, and 50.

Mathematics as a minor subject:

Prerequisite courses: Solid geometry (entrance credit or its equivalent);† higher algebra taken either in high school or college.

Course No.	Title	Credits
Math. 6	Trigonometry	5
Math. 7	College Algebra	5
Math. 30	Analytic Geometry	5
Math. 50	Calculus I	5
Additional credits in courses numbered over 50.....		3
Total credits		23

PHYSICS

Major Adviser: J. W. Buchta

For curriculum in natural science, see pages 53-54.

Physics as a major subject:

Course No.	Title	Credits
Phys. 7-8-9	General Physics	15
Phys. 52	Laboratory Arts	3
Phys. 107-109-111	Modern Physics	9

Additional credits selected from the following:

Phys. 108-110-112	Modern Experimental Physics (3 or 4 cred. per qtr.)	} 6
Phys. 124	Pyrometry (3 cred.).....	
Phys. 134	Experimental Optics (3 or 4 cred.).....	
Phys. 144	Electricity Measurement (3 cred.).....	

Total credits

† Those who did not present solid geometry for entrance may meet this requirement in one of the following ways: (1) by taking the subject in the Summer Session or in the General Extension Division by correspondence study; (2) by passing a college entrance examination or a special examination given by the Department of Mathematics.

Physics as a minor subject:

Phys. 7-8-9	General Physics	15
Phys. 11	Survey of Newer Developments in Physics	3
Phys. 52	Laboratory Arts	3
	Total credits	21

Students who have completed the old courses 3, 4 (Mechanics and Mechanics Laboratory) may complete the requirement in General Physics by taking Courses 13, 23, 24, 33, 34, 43, 44.

POLITICAL SCIENCE

Major Adviser: O. P. Field

For curriculum in social studies, see page 71.

Political Science as a major subject:

Thirty-six credits including:

Course No.	Title	Credits
Pol.Sci. 1-2-3	American Government and Politics	9

Additional courses in Political Science to the extent of 27 credits, including 7 or 15 or 25 and 12 credits in Senior College courses.

Political Science as a minor subject:

Eighteen credits including:

Course No.	Title	Credits
Pol.Sci. 1-2-3	American Government and Politics	9

Additional courses in Political Science to the extent of 9 credits, including either 7 or 15 or 25. At least 3 credits must be in Senior College courses.

ROMANCE LANGUAGES

Major Advisers: F. B. Barton, H. E. Clefton

French as a major subject:

Thirty-five credits in courses numbered above 4 including:

Course No.	Title	Credits
French 70-71-72	Survey of French Literature (or 73-74)	9 or 10
	and	
	One other literary course	3 to 9
French 50	French Pronunciation	3
French 53	French Composition	7
and		
French 54-55	French Conversation }	
or		
French 20	Oral and Written French	5
French 63	Advanced French Composition	3
French 103-104-105	French Syntax and Composition	3

French as a minor subject:

Seventeen credits in courses numbered above 4, including 70-71-72 or 73-74.

For majors and minors in other Romance languages consult adviser.

SOCIOLOGY AND SOCIAL WORK

Major Adviser: Clifford Kirkpatrick

For curriculum in social studies, see page 71.

Sociology as a major subject:

Thirty-six credits including 1, 6, and 14.

Course No.	Title	Credits
Soc. 1	Introduction to Sociology	5
Soc. 6	Social Interaction	3
Soc. 14	Rural Sociology	3
Additional credits		25

Students majoring in sociology must complete two teaching minors in addition to the required professional courses. Teachers of experience who already hold a teacher's certificate and do not desire further certification may be relieved of this requirement upon petition.

Sociology as a minor subject:

Nineteen or twenty credits including Soc. 1, 6, and 14.

SPEECH

Major Advisers: F. M. Rarig, Bryng Bryngelson

For curriculum in speech pathology, see pages 71-72.

Speech as a major subject:*

Course No.	Title	Credits
Speech 1-2-3	Fundamentals of Speech	9
or		
Speech 5-6	Fundamentals of Speech	10
Speech 31-32	Introduction to the Theater	6
Speech 55-56	Argumentation and Debate	6
Speech 61	Speech Correction	3
Speech 67	Phonetics	3
Speech 81-82	Interpretative Reading	6
Speech 121-122	Advanced Speech Problems	6
Total		39 or 40

Speech as a minor subject:

A minimum of 24 credits including Speech 1-2-3 or 5-6; 61 and 67; 31-32-33 or 55-56-57 or 81-82-83.

Speech Correction as a minor subject:*

Course No.	Title	Credits
Speech 1-2-3	Fundamentals of Speech	9
or		
Speech 5-6	Fundamentals of Speech	10
Speech 61	Speech Correction	3
Speech 67	Phonetics	3
Speech 162-163	Speech Pathology	6
Psy. 52	Genetic Psychology	3
C.W. 80	Child Psychology	3
Total		27 or 28

* Students are advised to take Psy. 4-5 or 7. Students expecting to major in Speech should consult a major adviser as early as possible in their Junior College course.

All students majoring or minoring in Speech must present satisfactory evidence of interest and effective participation in one or more activities, such as debating, dramatics, oratory, public reading, or public speaking.

Because of the close relation between English and speech in the high schools in Minnesota, students majoring in Speech must have one of their minors in English.

Students intending to take further work in speech correction, specializing in that field of speech alone, should include in their undergraduate course Physiology 4.

Students majoring in Speech register for methods and directed teaching in Ed.T. 66A-B-C.

ZOOLOGY

Major Adviser: J. E. Wodsedalek

For curriculum in natural science, see pages 53-54.

Zoology as a major subject:

Course No.	Title	Credits
Zool. 1-2-3	General Zoology	10
Zool. 52	Introductory Entomology	5
Zool. 53	Faunistic Zoology	5
Zool. 75	Nature Study	3
Zool. 83	Introduction to Genetics and Eugenics	3
Physiol. 4	Human Physiology	4

Zoology as a minor subject:

Minimum of 18 credits including Zool. 1-2-3, 53, and 75.

SPECIALIZED CURRICULA

ADMINISTRATION AND SUPERVISION

Major Adviser, Educational Administration: M. G. Neale

Major Advisers, Elementary School Supervision: L. J. Brueckner, W. E. Peik

Major Adviser, Secondary School Administration and Supervision:
Charles W. Boardman

The student who wishes to specialize in administration or supervision for any one of the following fields (superintendent of schools, elementary principal, elementary supervisor, secondary school principal, supervisor or supervising critic teacher in a training school and other administrative or supervisory position) must satisfactorily complete the requirements for the Master's degree. (See Bulletin of the Graduate School.)

The candidate for the Master's degree in administration or supervision should have completed, in his undergraduate years, one of the curricula preparing for secondary school teaching or the four-year curriculum in elementary education. The language requirement may be waived in all cases where a language is not essential in a thesis or the work to be pursued.

The work of the student will usually constitute a major in educational administration and supervision and a minor in educational psychology, but other combinations with subject-matter departments or a general major in education can be arranged, subject to approval of major adviser.

AGRICULTURAL EDUCATION

Major Adviser: A. M. Field

Students who have completed the required work of the freshman and sophomore years of the College of Agriculture, Forestry, and Home Economics, or equivalent, may prepare to teach agriculture in the public schools by completing the junior and senior years in a combined curriculum of the College of Education and the College of Agriculture, Forestry, and Home Economics.

The agriculture requirements can be fulfilled by the major, minor, and elective plan (Method I) as shown below, or by completing the suggested curriculum under Method II, page 32.

The education requirements can be fulfilled by completing satisfactorily 24 quarter credits in Agricultural Education courses, some of which are required courses. The courses now required are Ed. 51A, Agr.Ed. 81, 82, 83, 91.

FRESHMAN AND SOPHOMORE COURSES

The courses required for the freshman and sophomore years are essentially the same as are required of all agriculture students in the College of Agriculture, Forestry, and Home Economics. Every student should, if pos-

sible, complete these subject courses before the end of the sophomore year. See the Bulletin of the College of Agriculture, Forestry, and Home Economics.

JUNIOR AND SENIOR YEARS

Method I. Elective Curricula

Under this method the student, with the approval of his adviser, may select any curriculum which complies with the following requirements:

- a. A major of from 24 to 36 credits.
- b. A minor of 18 credits.
- c. Limited electives 18 credits, or more, which must be selected outside of the groups from which the major and minors have been chosen.
- d. Free electives, sufficient to meet the number of credit hours required for graduation in the agricultural education curriculum. Additional electives may be chosen from any of the courses offered in the University.

The major and minor must be selected from different elective groups.

Elective Groups

A. Groups from which major, minor, or electives may be chosen:

1. Agricultural Economics and Farm Management
2. Agricultural Education
3. Animal Industry, including
 - Animal Husbandry
 - Dairy Husbandry
 - Poultry Husbandry
 - Veterinary Medicine
4. Agricultural Sciences and Plant Industry, including
 - Agricultural Biochemistry
 - Agronomy and Plant Genetics
 - Entomology and Economic Zoology
 - Horticulture
 - Plant Pathology and Botany
 - Soils
5. Agricultural Engineering

B. Groups from which electives only may be chosen:

1. Bee Culture
2. Forestry
3. Home Economics
4. Military Science and Tactics
5. Physical Education
6. Rural Publications and Journalism
7. Courses in departments of other schools and colleges of the University.

Method II. Suggested Curriculum

The following suggested curriculum may serve as a guide to students desiring a well-balanced preparation for teaching agriculture and the sciences, for serving as county agent, or for practical farming, and will facilitate program making.

COLLEGE OF EDUCATION

Junior Year

Course No.	Title	Credits
Agr.Eng. 4	General Woodworking	3
Agr.Eng. 40	Mechanical Training	3
Agron. 21	Grain Crops	4
Agron. 23	Forage Crops	4
Agron. 31	Principles of Genetics	4
An.Husb. 3-4	Breeds of Livestock	6
An.Husb. 56-57	Livestock Feeding	6
Dy.Husb. 101	Milk Production	5
Ent. 5	Economic Entomology	5
Hort. 6	Fruit Growing	3
Vet. 50-51-52	Anatomy, Physiology, and Hygiene of Domestic Animals	9
Ed. 51A	Introduction to Secondary School Teaching	3

Senior Year

Agr.Econ. 40	Principles of Marketing Organization	3
Agr.Econ. 102	Farm Organization	3
Agr.Econ. 103	Farm Operation	3
Agr.Econ. 144	Co-operative Organization	3
Agr.Ed. 81,82,83	Teaching Agriculture	15
Agr.Ed. 91	Supervised Teaching Experience	3
An.Husb. 112	Animal Breeding	3
Pl.Path. 1	Plant Pathology	5
Soc. 14	Rural Sociology	3

It is recommended that electives be chosen from the courses in Agricultural Education or from such of the subject-matter courses as will best complete a well-balanced and well-distributed preparation. In addition to those found in the suggested curriculum above may be mentioned Agr. Eng. 12; Agron. 124, 132; Pl. Path. 9; Poul. 1. Recommended electives in education: Agr. Ed. 135, 54; Ed. 51C, 133, 167.

Graduates of the University of Minnesota completing these agriculture and education requirements will be eligible to apply for the Minnesota "high school standard special" certificate for teaching agriculture and the sciences in high schools or elementary schools of this state.

Students desiring to obtain the teacher's certificate should consult the head of the Division of Agricultural Education, preferably during the freshman year, to avoid difficulties that may arise in program making.

ART EDUCATION

Major Advisers: Ruth Raymond, Robert S. Hilpert

The College of Education offers a four-year course in art education which students may enter at the beginning of the freshman year.

The Curriculum in Art Education is based upon the assumption that "art is a way of life" appropriate to everybody and to all areas of living. It is planned to arouse the individual student to the possibilities of esthetic experience in the world today, to develop his ability to enjoy discriminatingly, to select judiciously, and to organize all kinds of materials creatively. Certain courses emphasize the acquiring of *art skills* that experience may be adequately shared with others. In the junior year *professional* courses in preparation for art teaching begin.

Successful completion of the four-year curriculum leads to the B.S. degree and makes the graduate eligible for the Minnesota "high school standard special" certificate for teaching art in elementary and high schools. Five years may be profitably spent in classes in the various phases of art, in courses which broaden and deepen the student's appreciation of excellence in life, and in professional courses which fit him to lead others in developing their artistic resources and for community leadership in art activities.

MINIMAL REQUIREMENTS FOR THE B.S. DEGREE WITH A MAJOR IN ART

A balanced selection from the various types of experience which follow:

1. Art courses:
 - Group A at least 18 credits in design
 - Group B at least 12 credits in handicraft
 - Group C at least 18 credits in drawing and painting
 - Group D at least 5 credits in appreciation
 - Group E at least 3 credits in theory of art teaching
 - Group F at least 9 credits in student teaching and special methods
2. A minor group of at least 18 credits in which the student should develop an interest allied with his art interest. These courses may be chosen from any one of the departments of the University. Freshman English cannot be included in the minor group. The requirement of this minor is waived for graduates of state teachers colleges.
3. Professional education courses:
 - 9 credits in Education 51A-B-C (Introduction to Secondary School Teaching)
 - 8 credits from the professional courses listed on pages 21-22.
4. Required supporting courses: a minimum of
 - 18 credits in English composition and literature
 - 9 or 10 credits in history, if a minor of high-school history has not been presented for entrance
 - 6 to 10 credits in natural science if a minor of laboratory science has not been presented for entrance
 - 6 credits in psychology
 - 5 credits in sociology
 - 3 credits in textiles
5. Electives: Recommended electives: continuation of a language begun in high school; speech arts, for use in teaching and to lead to the play production courses; courses in philosophy, history, sociology, and psychology; courses in sports and the dance; courses for the appreciation of music, literary classics, and the stage. Attendance upon concerts, exhibitions, and plays is urged as part of an art education. A number of the available electives may be spent profitably in the various art courses beyond the minimal requirement.

SUGGESTED FOUR-YEAR COURSE IN ART EDUCATION

Course No.	Title	Credits
Engl. A-B-C	Freshman English	9
or		
Comp. 4-5-6	Freshman Composition	15
Hist.	Selected under advice	16 or 10
Sci.		
Soc.		
Phys.Ed.	General Course in Physical Education	3
ArtEd. 14-15-16	Introduction to Art	9
ArtEd. 1-2-3	Fundamental Experience in Design	9
ArtEd. 4-6-8	Drawing from Still Life and Pose	6, 4, or 2
	(or examination)	

Optional credits should be used to build up a minor by the end of the fourth year.

COLLEGE OF EDUCATION

Sophomore Year

Psy. 1-2	General Psychology	6
Engl.	(Total minimum 18 credits)	3 or 9
	Academic options (for minor or electives)	20 or 15
Phys.Ed. 1-6	General Course in Physical Education (for women).....	2
ArtEd. 20-21-22	Fundamental Experiences in Design	9
ArtEd. 24-26-28	Drawing from Still Life and Pose	6

OPTIONAL

ArtEd. 23	Composition Clinic	2
ArtEd. 29-30	Rhythmic Sketch	2

Junior Year

	Academic options	9
Ed. 51A-B-C	Introduction to Secondary School Teaching	9
ArtEd. 52A-B	Design for Home and Furnishings	6
ArtEd. 61-62-63	Drawing and Painting	6
	Handicrafts	9 or 6

OPTIONAL

ArtEd. 57-58	Art and Leisure	2
ArtEd. 29-30	Rhythmic Sketch	2
Fine Arts 1,2,3	History of Art	3, 6, or 9

Senior Year

	Academic options	15
ArtEd. 80-81-82	Special Methods in Art	3
ArtEd. 86-87-88	Student Teaching in Art	6
	Education electives	8
ArtEd. 50-51	Design for Commerce and Industry.....	6
ArtEd. 66-67-68	Painting	6
ArtEd. 183E	Problems in Art Education	3
or		
ArtEd. 185E	Types of Art Instruction II.....	3
	Handicrafts	3 or 6

ELECTIVES

ArtEd. 153-154-155E	Apprec. of the Home, Costume, Painting, Sculpture, Ceramics	9, 6, or 3
	History of Art	9, 6, or 3
	Painting and Sculpture	6, 4, or 2

The C+ average (honor point ratio 1.5) is based on all courses taken in Art Education.

MINOR IN ART EDUCATION

A minor is provided with especial reference to graduates of state teachers colleges who have taste in art and some teaching experience, that they may meet the state's need for teachers able to teach art in combination with other elementary or high school subjects; and for undergraduate students in curricula other than art.

REQUIREMENTS FOR A MINOR IN ART

Twenty-seven credits in a balanced distribution which recognizes the necessity of typical experiences in the following groups. Especially recommended are:

Group A Design—Art Ed. 1T-2T-3T, 54-55-56.

Group B Handicrafts—Art Ed. 32, 32A, 33, 35, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46 (six of these offered in one year.)

Group C Drawing—Art Ed. 29-30, 4-6-8.

Group D Appreciation—Art Ed. 14-15-16, 57-58.

Group E Professional Aspect—Art Ed. 80T-81T-82T.

COMMERCIAL EDUCATION

Major Adviser: William S. Carlson

The curriculum in commercial education is designed to prepare teachers of commercial subjects in secondary schools. It is purposely made much broader in its scope than the present program of the typical high school commercial department, with the idea of paving the way for meeting more effectively than at present the needs of high school students who enter business. Completion of this curriculum leads to the bachelor of science degree and provides the training necessary for the Minnesota "high school standard special" certificate for teaching commercial subjects.

The first two years' work, taken in the Junior College, College of Science, Literature, and the Arts, consists of the regular academic requirements of that college, with the foreign language requirement omitted and foundation courses in psychology, economics, statistics, accounting, and secretarial training added.

Students who enter the College of Education from other institutions must substitute for some of their electives such of the Junior College requirements as they have not fulfilled. Graduates from the two-year course in state teachers colleges and transfer students who have not had typing and shorthand may find it necessary to attend an extra Summer Session or an extra year in order to meet all requirements.

Students who have had a high school course or experience in bookkeeping may be exempt from Econ. 20 and admitted to Econ. 25 by passing a placement test. Students who have had one year of high school typewriting are admitted to Econ. 33; those who have had two years of high school typewriting are admitted to Econ. 34. Students who have had two years of high school shorthand are admitted to Econ. 40 and are exempt from Econ. 37-38-39.

For the professional requirement in this curriculum, see pages 21-22.

FOUR-YEAR CURRICULUM IN COMMERCIAL EDUCATION

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

Course No.	Title	Credits
Comp. 4-5-6	Freshman Composition (or Eng., A-B-C or exemption)	9
	Natural Science	10
	Social Science, other than economics	10
Econ. 3	Elements of Money and Banking	5
Econ. 5	Elements of Statistics	5
Econ. 6-7	Principles of Economics	10
Econ. 20	Elements of Accounting	3
Econ. 25-26	Principles of Accounting	6
Econ. 32	Secretarial Training: Typewriting	1
Econ. 37-38-39	Secretarial Training: Shorthand	9
Psy. 1-2	General Psychology	6
	Physical Education	3 or 5
	Electives, for which the following are especially recommended: continuation of a language begun in high school, speech, philosophy, additional social science	16 or 18
	Total	95

COLLEGE OF EDUCATION

Junior Year

B.A. 51,52,53	Business Law	9
B.A. 86	Office Organization and Management	3
Econ. 40-41-42	Secretarial Procedure	9
Econ. 33,34	Secretarial Training: Typewriting, Advanced Typewriting	2
Ed. 51A-B-C	Introduction to Secondary School Teaching	9
	Electives*	13

Senior Year

Ed.T. 73A-B-C	Special Methods and Directed Teaching in Commercial Subjects	9
Econ. 141	Monetary and Banking Policy	3
Econ. 161	Labor Problems and Trade Unionism	3
Econ. 185	Economics of Marketing	3
B.A. 92	Accounting Practice Laboratory	3
B.A. 180	Senior Course Topics	3
Geog. 41	Geography of Commercial Production	5
	Electives*	16

Recommended Electives

Title	Credits
History of Education (Ed. 71, 101, 102, or 103)	3 or 5
Educational Sociology (Ed. 73)	3
Advertising (Psychology 56 and B.A. 88)	6
American Economic History (Hist. 83-84-85)	9
Personnel Administration (B.A. 167)	3
Additional English Composition	6
The Modern Corporation (Econ. 160)	3
Cost Accounting (General Survey) (B.A. 130)	3
Economics of Transportation (Econ. 172)	3

For the purpose of computing the C+ average (honor point ratio 1.5) the following are considered the major courses: Econ. 6-7, 20, 25, 26; B.A. 51, 52, 53; Geog. 41; Econ. 32-33, 34, 37-38-39, 40-41-42.

* Electives must include 8 credits in education courses as listed on pages 21-22.

EDUCATIONAL PSYCHOLOGY

Major Adviser, Educational Psychology: W. S. Miller

Major Advisers, Educational and Vocational Guidance: C. Gilbert Wrenn,
Marcia Edwards

Students who are planning on assuming certain specialized duties in connection with their high school teaching or who are interested in securing a basis for further graduate work may register in the Graduate School and elect a graduate major or minor in Educational Psychology.

The training for the Master's degree in the various fields is intended particularly for students who may perform the duties of counselor, dean, clinical psychologist, or specialist in tests and measurements in connection with teaching duties in the high school. It is not the purpose to produce a person with highly specialized training, but to supply a basis for later professional growth as well as some immediate background for handling the problems involved in the several positions indicated.

Three types of programs may be arranged in consultation with advisers. The first constitutes a major or minor in general educational psychology; the second is a major in clinical educational psychology; and the third is a major or minor in educational and vocational guidance.

Guidance and student personnel work.—Work leading to the M.A. or Ph.D. degree can be taken with a concentration in this field. Preparation is possible for either technical or administrative positions at either the secondary school or college level. A major in educational psychology is most frequently advised with a minor in either psychology, education, or sociology. A major in education is also possible with a minor in psychology. The Plan A type M.A. program is the almost universal recommendation for students desiring only the first graduate degree.

In this field heavy stress is laid upon training leading to an adequate understanding of the individual student. Emphasis is also placed upon clinical practice or internship experience in active school, university, or social agency guidance programs, provided for under Ed.Psy. 181, Practice in Personnel Work. Basic courses leading up to the internship (not all of the following are prerequisite to Ed.Psy. 181) are Ed.C.I. 133, Guidance in Secondary Schools, Ed.Psy. 120, Basic Principles of Measurement, Ed.C.I. 135, Teaching of Occupations, Ed.Psy. 158, Psychology of Adolescence, Ed.Psy. 159 Personality Adjustments in Education, Ed.Psy. 141, Group Aptitude Testing, Ed.Psy. 225, Diagnosis and Counseling in the Guidance Program and Ed. 252 Student Personnel Work in College and University. In addition, students are advised to become familiar with curriculum and administrative problems at either the public school or higher education level, to take certain courses in psychology and sociology, and, if a doctorate candidate, to take advanced courses in statistics and measurement and to probe research problems in the student personnel field.

ELEMENTARY EDUCATION

CURRICULA IN ELEMENTARY EDUCATION FOR TEACHING, SUPERVISION, OR ELEMENTARY SCHOOL PRINCIPALSHIPS

Major Advisers, Elementary Education, Supervision, or Teaching:
L. J. Brueckner, W. E. Peik

Major Advisers, Nursery School, Kindergarten-Primary, and Parental
Education: J. E. Anderson, Josephine C. Foster

Curriculum IA, Curriculum IB, Curriculum IC, and Curriculum II are for four different groups of students.

Curriculum IA and Curriculum II are for:

1. General elementary school teaching (all grades: primary, intermediate, or upper grades), qualifying for the Minnesota *elementary school advanced* certificate.
2. Elementary school principalships and elementary school supervisorships in Minnesota, if or when holder has had two years of elementary school teaching experience.
3. Junior high school teaching when so endorsed after certain modifications, as specified later, have been made.

Curriculum IB is for nursery school, kindergarten-primary teaching qualifying for the Minnesota special *kindergarten-primary* certificate.

Curriculum IC is for students who already hold a Bachelor's degree and who wish to qualify for the Minnesota *kindergarten-primary* certificate.

The three four-year curricula constitute also the first four years of five-year curricula. (see pages 30, 44 for more intensive specialization in elementary teaching, general grade supervisorships, elementary school principalships, critic teaching or supervision of student teaching in teacher training institutions, nursery school, kindergarten teaching, parental education, and for instructors of elementary education in teachers colleges and other institutions.

Curriculum IA and IB (Freshman and Sophomore years)

For university, college, and teachers college students who will spend the first two years largely or entirely in academic or pre-education junior college work and who wish to qualify for the advanced elementary school certificate for teaching, supervision, or principalships in any or all of the eight grades with or without special endorsement for the junior high school, Curriculum IA; for nursery school, kindergarten-primary certification, Curriculum IB.

SPECIALIZED CURRICULA

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COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

General Minimum Requirements for Curriculum IA and Curriculum IB

Course No.	Title	Credits
Comp. 4-5-6	Freshman Composition (or Eng. A-B-C or exemption).....	9
Hist. 1-2 or 7-8-9	European Civilization or American History or both.....	9 or 10
Geog. 11	Human Geography	5
Science	Biological sciences (General Botany, General Zoology or both), total minimum required	10
Sp. 1-2	Fundamentals of Speech	6
Soc. 1	Introduction to Sociology	5
Pol.Sci. 1-2	American Government and Politics.....	6
ArtEd. 1T-2T-3T	Fundamental Experiences in Art	6
ArtEd.	Two credits selected from the following: ArtEd. 32, Paper; ArtEd. 32A, Cardboard and Paper Problems; ArtEd. 35, Clay; ArtEd. 35A, Simple Ceramic Processes; ArtEd. 38, Simple Textile Processes	2
Ind. 11	Special-Class Woodwork	2
H.E. 20-21	Introduction to Related Art and Color and Design I	7
or		
H.E. 56A-56B	Applications of Color and Design	6
Mu. 1	Ear Training	2
Mu.Ed. 1	Music Orientation	0
Mu. 31 or 32		
or 33	Music Appreciation	2
Psy. 1-2	General Psychology	6
H.E. 30	Introduction to Nutrition	2
Phys.Ed. 1-7	General Course in Physical Education	5
Phys.Ed. 23A		
or 23B	Elementary Games and Folk Dances	½
Phys.Ed. 60	Principles of Play	3
P.M. & P.H. 3	Personal Health	2
or		
P.M. & P.H. 50	Public and Personal Health	3
	Electives	4-7
	Total	95

Equivalent courses offered in the General College or equivalent courses taken elsewhere may be substituted in the various fields with the approval of the adviser and of the Students' Work Committee of the College of Education.

Students transferring from teachers colleges with 90 blanket credits will not be held for the Junior College requirements in Comp. 4-5-6, Hist. 1-2 or 7-8-9, Geog. 11, Sci. (10 credits), Sp. 1-2, Psy. 1-2, Pol.Sci. 1-2; but they will be held for the other Junior College requirements for Curriculum IA and IB.

Certain deficiencies due to transfer from other schools can be made up after entry to the College of Education. Certain substitutions can be made. The aim is broad functional contacts with cultural fields of knowledge essential for the general education of the teacher and as marginal resources for teaching the common and special subjects of the elementary school.

Curriculum IA (Junior and Senior Years)

COLLEGE OF EDUCATION

For those who wish to secure the Minnesota elementary school advanced certificate qualifying the holder to teach in any of the grades 1 to 8, inclusive; and when so endorsed, after certain modifications as noted below, also in junior high schools. After two years of successful experience the curriculum qualifies for the Minnesota elementary school principal's and supervisor's certificate.

1. *Academic fields.*—Completion of one regular academic minor (pages 23-29) and 18 credits of concentration in each of two additional fields as listed below. These fields of concentration may include, with approval of major adviser, the Junior College subject-matter courses already completed at the University of Minnesota or elsewhere.

English	A natural science or preferably general science
A foreign language	Mathematics
Geography	Art
History	Music
A social science other than history or geography, or preferably, general social sciences other than history or geography	Library Methods
	Physical Education
	Others by special permission of adviser

Much of the work of the junior year should be in the above academic subjects. A total of 18 credits in academic subjects must be in courses numbered 50 or above.

2. *General and elementary education.*—A major of 45 credits.

Course No.	Title	Credits
Ed. 61A-B-C	Introduction to Elementary School Teaching	9
Ed.Psy. 60	Introduction to Statistical Methods	2 or 3
ArtEd.	Courses in theory and practice of art teaching as advised by Art Department	3
Mu.Ed. 50B	Intermediate Methods	2
Ed.T. 54A-B-C*	Teaching of Elementary School Subjects (Reading, social studies, English including handwriting, and arithmetic, with observation and directed teaching)	15
Ed.Ad. 124	Public School Administration	3
Ed.C.I. 119	The Elementary School Curriculum	3
Ed.C.I. 150	Supervision and Improvement of Instruction	3
Ed.C.I. 151	Diagnostic and Remedial Instruction	3

The C+ average is based on the required courses listed for the junior and senior years.

* Passing the qualifying examination is a prerequisite to this course.

Special examinations.—Students should consult the advisers early in their course about the specific comprehensive examinations which may be required for directed teaching and for graduation. These vary somewhat for those desiring junior high school endorsement.

Junior high school endorsement.—Upon the completion of (a) a regular minor for teaching in secondary schools (see pages 23-29), (b) Ed. 167, The Junior High School, (c) a special methods course covering the junior high school level in the minor, and (d) directed teaching or experience in grades 7, 8, or 9, the students pursuing Curriculum IA may receive endorsement for junior high school teaching on the certificate for the elementary school.

Curriculum IB (Junior and Senior Years)

COLLEGE OF EDUCATION

For those who wish to secure the Minnesota special kindergarten-primary certificate qualifying for nursery school, kindergarten-primary teaching.

Course No.	Title	Credits
Ed. 61A-B-C	Introduction to Elementary School Teaching	9
C.W. 80	Child Psychology	3
Ed.T. 55	Principles of Early Childhood Education	3
Ed.T. 56	Permanent Play Materials	2
Ed.T. 57	Plastic Materials	3
Ed.T. 58	Rhythms, Games, and Music for the Young Child	2
Ed.T. 59	Story Telling for Young Children	2
Ed.T. 76A-B-C	Methods and Observation	3
Soc. 49	Social Pathology	3
Ed.Psy. 60	Introduction to Statistical Methods	3
or		
Ed.Psy. 120	Basic Principles of Measurement	3
Phys.Ed. 60	Principles of Play	3
P.M.&P.H. 57	Health of Infant and Preschool Child	2
or		
P.M.&P.H. 59	Health of the School Child	3
	Electives	6 or 7
Ed.T. 54A-B*	The Teaching of Elementary School Subjects	10
Ed.T. 77A-B-C*	Directed Teaching in Kindergarten or Nursery School	9
C.W. 170	Parent Education	2
	Electives	24
Total		90

The C+ average is based on the following courses: C.W. 80, 170, Ed.T. 55, 56, 57, 58, 59, 54A-B, 77A-B-C.

CURRICULUM IC

COLLEGE OF EDUCATION

For students who already have a B.A. or B.S. degree and who wish to receive a B.S. degree with a nursery school, kindergarten-primary certificate.†

* Passing the qualifying examinations is a prerequisite to this course.

† Electives may be substituted for any of these courses or their equivalent, which the student has already taken.

Course No.	Title	Credits
Ed. 61A-B-C	Introduction to Elementary School Teaching	9
Ed.T. 54A-B*	Teaching of Elementary School Subjects	10
C.W. 80	Child Psychology	3
Ed.T. 55	Principles of Early Childhood Education	3
Ed.T. 56	Permanent Play Materials	2
Ed.T. 57	Plastic Materials	3
Ed.T. 58	Rhythms, Games, and Music for the Young Child	2
Ed.T. 59	Story Telling	2
Ed.T. 76A-B-C	Methods and Observation	3
Ed.T. 77A-B*	Directed Teaching in Kindergarten or Nursery School	6
H.E. 30	Introduction to Nutrition	2
Total		45

Curriculum II (Junior and Senior Years)

COLLEGE OF EDUCATION

For graduates of the usual two-year advanced normal professional curriculum for elementary teachers in teachers colleges and normal schools, or its equivalent, for which 90 blanket credits (2 years' work) are allowed in the College of Education toward graduation:

The curriculum leads to the elementary school advanced certificate and if or when two years of experience in elementary education have been completed, to the Minnesota state principal's or supervisor's certificate as well. By substituting certain elective courses in the junior high school field the certificate is made legal also for junior high school teaching.

A. *Major in elementary education.*—30 credits in the College of Education as follows:

1. Required of all.

Course No.	Title	Credits
Ed.Psy. 60	Introduction to Statistical Methods	2 or 3
Ed.Ad. 124	Public School Administration	3
Ed.C.I. 119	The Elementary School Curriculum	3
Ed.C.I. 150	Supervision and Improvement of Instruction	3
Ed.C.I. 151	Diagnostic and Remedial Instruction	3
Ed.C.I. 181	Foundations of Elementary School Methods	3
Total		17 or 18

2. Additional electives in education to complete 30 quarter credits selected from the following courses:

Course No.	Title	Credits
Ed. 73	Educational Sociology	3
Ed. 103	History of Modern Elementary Education	3
Ed. 167	The Junior High School	2 or 3
Ed.C.I. 63	Children's Literature	2
Ed.T. 64	The Teaching of Geography and History in the Elementary Schools	2
Ed.C.I. 122	Literature for Adolescents	2
Ed.C.I. 143	The Teaching of Reading in the Elementary Grades	2
Ed.C.I. 148	The Teaching of Primary Arithmetic	2
Ed.C.I. 149	The Teaching of Intermediate Grade Arithmetic	2
Ed.C.I. 152	Supervision: The Adjustment of Schools to Individual Differences	2

Course No.	Title	Credits
Ed.C.I. 153	Supervision and Teaching of English in the Elementary Schools	2
Ed.C.I. 154	Supervision and Teaching of the Social Studies	2
Ed.C.I. 155	The Supervision and Teaching of Arithmetic	2
Ed.C.I. 156*	Practice Supervision—Group Problems and Field Work	3
Ed.C.I. 157*	Practice Supervision—Individual Problems in Field	3
Ed.C.I. 159	The Supervision and Teaching of Reading	2
Ed.C.I. 160	Supervision of Elementary Subjects	3
Ed.C.I. 172	Curriculum and Course of Study Construction	2
Ed.Ad. 115	Organization of the Elementary School	2
Ed.Ad. 125	Techniques in Administration	3
Ed.Psy. 113-114-115	Psychology of Elementary School Subjects	6
Ed.Psy. 120	Basic Principles of Measurement	2 or 3
Ed.Psy. 140	Construction and Use of Educational Tests and Examinations	2 or 3
Ed.Psy. 141	Construction and Use of Group Aptitude Tests	3
Ed.Psy. 146-147	Child Guidance	4
Ed.Psy. 157	Psychology of Child Development, or C.W. 80—Child Psychology	2 or 3
Ed.Psy. 158	Psychology of Adolescence (open to those desiring Jr. H.S. endorsement or certificate)	3
Ed.Psy. 183	Psychology of Gifted Children	2

Others with approval of adviser. The student may be required to take other courses in education if no course in tests and measurements has been taken previously. The C+ average is based on the 30 credits in education.

B. Subject-matter and academic fields.—60 credits.

1. Eighteen credits in each of at least two of the following or such other fields as may be approved by the adviser. In each case all 18 credits are to be taken during the third and fourth years and are as a rule to be selected from courses offered in minor and major sequences of the College of Education (see pages 23-29 and Combined Class Schedule). Transfer students must aim to supplement, and not to duplicate, courses taken elsewhere. Credit cannot be allowed for courses that are largely duplication. The fields are:

English	Mathematics
A foreign language	Art
Geography	Fine Arts
History	Music
A science or general science	Library Methods
A social science or general social sciences	Physical Education
(other than history or geography)	Others by special permission

2. Academic electives—24 credits.

NOTE.—At least 18 of the 60 academic credits are to be in courses numbered 50 or above.

Excess quality credits earned in all courses will reduce the general elective credits required in academic subjects.

C. Special examinations.—Students should consult the advisers early in their work about the specific comprehensive examinations which may be required for graduation.

Junior high school endorsement.—To secure endorsement for junior high

* Passing the qualifying examinations is a prerequisite to this course.

school teaching it is required that (a) the student complete an academic minor as outlined on pages 23-29; and that (b) the course Ed. 167, The Junior High School and (c) a methods course in a minor be included in the educational electives. The qualifying examination in the minor is prerequisite to the methods course.

Elementary teachers, taking extension courses, who will ultimately transfer to the College of Education for a degree should follow the pattern of the curriculum to be certain that the work taken will apply toward graduation, certification, and contribute toward passing the comprehensive examinations based upon the requirements.

Exemption from directed teaching based on previous practice teaching or in lieu of equivalent experience must be obtained by petition to Mr. W. S. Carlson.

FIFTH YEAR IN THE GRADUATE SCHOOL

ELEMENTARY SCHOOL ADMINISTRATION AND SUPERVISION, TEACHER TRAINING, NURSERY, KINDERGARTEN-PRIMARY EDUCATION, OR GENERAL ELEMENTARY EDUCATION

It is recommended that as a rule students without any teaching experience teach a year or two before taking graduate work. Students will select their advisers according to their specialization, interests, and needs. For the list of advisers see the introductory statement (page 38). For statement of the general plan of graduate work in the College of Education, see pages 16-18. For a further discussion of general Graduate School requirements see the Bulletin of the Graduate School.

HIGHER EDUCATION

Major Adviser: T. R. McConnell

Higher education may be chosen as the center of interest for a program of concentration leading to the Master's or Doctor's degree. The following sequence of courses may be elected as the core of the program, and the remainder chosen from related fields: Ed. 250, Higher Education in the United States; Ed. 251, Curriculum and Instruction in Higher Education; Ed. 252, Student Personnel Work in College and University; Ed. 253, Administration in Higher Education; Ed. 254, Measurement and Evaluation in Higher Education; Ed. 228-229-230, Problems of College Education; Ed. 285, Professional Education of Teachers; Ed. 286, Problems in Teacher Training; Ed. 287, Instruction and Administration in Teacher Training Institutions.

Unusual facilities are offered for laboratory work in higher education through the co-operation of administrative, research, and service departments, and through the University's experimental educational divisions. Such laboratories include the University Testing Bureau and its associated counseling services, the General College, and the University Committee on Educational Research, through which are co-ordinated the researches on the University's own educational problems.

HOME ECONOMICS EDUCATION

Major Advisers: Wylle B. McNeal, Clara M. Brown, Ella J. Rose

The College of Agriculture, Forestry, and Home Economics and the College of Education co-operate in the preparation of teachers of home economics. Satisfactory completion of the following curricula will lead to the B.S. degree and will provide the necessary training for qualification for the Minnesota "high school standard special certificate" for teaching home economics in the secondary school. The teachers' curricula are arranged in accordance with the provisions of the Vocational Education Act.

When the student has acquired a minimum of 95 credits, including physical education, and at least one honor point per credit (junior classification) and indicated her specialization as the teachers' or the extension teachers' curriculum, she becomes a registrant also in the College of Education. At the beginning of the junior year, the student is required to take the psychological examination given in the College of Education.

Prior to registration for Supervised Teaching, the student must have completed the following requirements:

The qualifying examination required of all those graduating from the College of Education.

Home experience in meal preparation and clothing.

Certain home economics courses with a grade of at least C.

In order to be recommended for graduation in the teaching specialization the student must have (1) 1.5 honor points per credit in all home economics courses required in the curriculum for general home economics teaching, not including home economics education courses, (2) an average of 1 honor point per credit in all other courses pursued during the junior and senior years.

By a proper selection of courses, students qualifying for the degree of bachelor of science may qualify for teaching in more than one field. This is desirable since beginning teachers in public schools are often expected to teach an academic subject in addition to home economics.

CURRICULUM FOR GENERAL HOME ECONOMICS TEACHING*

The following courses are required of those preparing for teaching general home economics: (See Combined Class Schedule for course number, title, hour, and prerequisites.)

Home Economics: H.E.1, 3, 4, 10, 15, 20, 21, 22, 31, 34 (or 170-171), 40, 41, 50, 53, 55, 85, 86, 180, 185.

English: Rhet. 1, 2, 3, 22 (or 11), 31 (or 32 or 33), 34, 51.¶

Biological Science: Zool. 14-15 and Physiol. 4 (or 51) or G.C. 101-102; Bact. 41; P.M.&P.H. 52.

* For General Home Economics Teaching specialization a grade of at least C is required for the following courses: H.E. 1, 3, 4, 20, 21, 22, 31, 34 (or 170), 40, 41, 55, Freshman Assembly: A course of lectures offered only in the fall quarter.

¶ Unless exempt.

Physical Science: Chem. 1-2 (or 9-10 $\frac{1}{2}$ or 6-7) and Agr.Eng. 23 \dagger (or 35) or G.C. 88-89, Agr. Biochem. 4.

Social Science: Agr.Econ. 3 (or Econ. 6-7), 126, Soc. 1, and additional credits chosen from anthropology, economics, geography, history, political science, sociology, or philosophy to total 18 credits.

Psychology: Psy. 1-2.

Home Economics Education: H.E.Ed. 90 (or C.W. 40), Ed. 51A, 51C, H.E.Ed. 91, 92, 93-94, 192.

Physical Education: 3 credits.

Those whose interests lead them into further specialization in the teaching field may choose one of the following groups. The student should plan her program early in her college course to be certain that she has the necessary prerequisites.

Textiles and Clothing: To the above requirements in general teaching add: H.E. 54, 102, 115, 120, Bot. 1.

Foods: H.E. 61, 142, 146 or 147; Agr.Biochem. 2.

Nutrition: (Omit H.E. 3, 4, 21, 22, 52 (or 53), 55 and 180 and G. C. courses and Agr.Econ. 126.) To the above requirements in general teaching add: H.E. 24, 75, 142, 173, 179. Desirable electives are H.E. 33, Agr. Biochem. 2.

Home Economics Extension: Those who wish to go into home economics extension teaching should fulfill the requirements of the general teachers' curriculum and add H.E. 98.

Related Art:* Substitute for the requirements in general teaching the following list of required courses:

Home Economics: H.E. 1, 3, 4, 10, 15, 20, 21, 22, 23, 25 (or 26), 31, 34, 40, 50, 55, 85, 86, 120, 121, 122, 125, 180, 185.

English: Rhet. 1, 2, 3, 22 (or 11), 31 (or 32 or 60), 34, 51.

Biological Science: G.C. 101, 102, P.M.&P.H. 3, 4.

Physical Science: G.C. 88, \dagger 89 (or Agr.Eng. 23).

Social Sciences: Agr.Econ. 3, Soc. 1, G.C. 28 or Hist. 1-2 and additional credits to total 18.

Psychology: Psy. 1-2.

Home Economics Education: H.E.Ed. 90 (or C.W. 40), 91, 92-93, 94, 192, 197.

Education: Ed. 51A, 51C.

Physical Education, 3 credits.

Art Education: 6 cred. freehand drawing from the following courses: ArtEd. 6, 8, 29-30; Arch.D.P.I.

Fine Arts: Any course.

In order to fulfill the requirements for teaching general home economics in addition to related art, the course listed below should be included.

Home Economics: H.E. 41.

INDUSTRIAL EDUCATION

Major Adviser: Homer J. Smith

The following curriculum has been designed for young men who desire to prepare for teaching, administrative, and supervisory positions in the fields of industrial arts and trade education. The satisfactory completion of the four years of work here specified entitles the student to the bachelor

* For the Related Arts Teaching specialization a grade of at least C is required for the following courses: H.E. 1, 20, 21, 22, 23, 25, 26, 55, 122, 125, 180.

\dagger Students who have had one year of high school physics may be exempted from Agr.Eng. 23 and G.C. 88 and substitute Agr.Eng. 35.

\S Open to those who have had one year of high school chemistry.

of science degree and provides the training necessary for the Minnesota "high school standard special" certificate.

Minnesota Standards for Graded Elementary and High Schools, page 35, contains the following provision:

From and after July 1, 1929, a certificate to teach general industrial education may be issued only upon a bachelor's degree in industrial education from an institution accredited for the training of teachers of industrial arts, but the status of industrial teachers holding certificates prior to that date shall not be affected.

Certain courses of the curriculum are acceptable for Smith-Hughes and George-Deen certification, for service in trade schools and classes—day, evening, and part-time as to type. These courses should be selected only upon recommendation of the departmental adviser or the state supervisor of trade and industrial education. The latter assures himself of the vocational competence of those who desire educational courses to complete requirements. Special certificates are issued by the State Department of Education. General industrial certificates and vocational industrial certificates are based upon wholly different preparations and should not be confused.

A bulletin descriptive of the plan and work of this special department will be furnished upon request. It shows the four-year curriculum, explains federal relationships, and suggests available off-campus courses and services. Those interested in credit transfer for advanced standing should confer or correspond with the major adviser.

Graduate work is provided, there being plans for the Master's degree both with and without the thesis project. Courses within the curriculum, numbered 100 to 199, carry graduate credit for students who have not presented them earlier as undergraduate earnings. Other courses, 100-199 in number, and some 200 and above are available at the Master's level and are not parts of the undergraduate curriculum.

Minnesota graduates enroll immediately in the Graduate School. Others present transcripts of credit from all institutions attended since high school completion and status is then determined with reference to the institution which awarded the first degree and to the pattern of courses of record in the transcripts.

Persons desiring to do work beyond the Master's degree should consult with the major adviser as to status and program.

FOUR-YEAR CURRICULUM IN INDUSTRIAL EDUCATION

Freshman Year

Course No.	Title	Credits
Comp. 4-5-6	Freshman Composition (or A-B-C or exemption)	9
Math. or Nat. Sci.	(Consult adviser)	15
Ind. 30	Graphic Presentation	2
Shopwork	(Consult adviser)	10
Drawing	(Consult adviser)	6
	Electives (Consult adviser)	3
	Physical Education	3

Sophomore Year

Course No.	Title	Credits
Psy. 1-2	General Psychology	6
Math. or Nat. Sci.	(Consult adviser)	5
Ind. 40	Analysis	2
Ind. 42	Course Organization	2
Ind. 44	Equipment and Management	2
Ind. 60	Philosophy of Vocational Education	2
Ind. 61	Practices in Vocational Education	2
Ind. 80	General Industrial Training	2
Ind. 81	The General Shop	2
Shopwork	(Consult adviser)	10
Drawing	(Consult adviser)	4
	Electives (Consult adviser)	6

Junior Year

Course No.	Title	Credits
Econ. 6-7	Principles of Economics	10
Soc. 1	Introduction to Sociology	5
Ed. Psy. 60	Introduction to Statistical Methods	3
Ed. 51A-B-C*	Introduction to Secondary School Teaching	9
Ed. 73	Educational Sociology	3
Ind. 66	Related Subjects	2
Ind. 70	Methods in Shop Subjects	2
Ind. 75	Methods in Drawing	2
	Electives (Consult adviser)	9

Senior Year

Course No.	Title	Credits
Ed. Ad. 124	Public School Administration	3
Ind. 50A,B,C†	Directed Teaching	6
Art Ed.	(Consult adviser)	6
Ind. 101	Tests in Industrial Subjects	2
Ind. 103	Instructional Aids	2
Ind. 107	Co-ordination	2
Ind. 108	Apprenticeship	2
Ind. 110	Guidance in the Schools	2 or 3
Ind. 170	Day Industrial Schools	2
Ind. 171	Evening Industrial Schools	2
Ind. 172	Part-time Education	2
	Electives (Consult adviser)	14

A degree candidate is privileged to complete his work under the curriculum form which was current when he entered.

The C+ average is based on all courses in Industrial Education. Shop and drawing courses may be included.

The department offers courses other than those named in the four-year curriculum, several of them at the graduate level. Examples: Ind. 11, Special-class Woodwork; Ind. 65, Non-vocational Subjects; Ind. 105, In-

* Equivalent to courses formerly numbered Ed. Psy. 55, Ed. T. 15, and Ed. Ad. 65 (or 167); also equivalent to Ed. 51-52-53.

† Senior status and passing the qualifying examination are prerequisite to this course; also Ind. 80 and either 70 or 75.

dustrial Education (Administration); Ind. 115, Supervision of Industrial Education; Ind. 250-251-252, Problems in Vocational Education; Ind. 200, Research Problems.

Many of the required and elective courses may be pursued through extension and correspondence study arrangements. All required courses are brought into the summer programs by rotation.

The required 20 credits in shopwork and 10 credits in drawing (30 total) may be increased by election to a maximum of 45 credits. All such courses should be selected under advice and may be either extensive or intensive in resultant preparation for teaching. Credits in excess of 45 will be recorded but will not be counted toward the graduation requirements. In addition to shopwork and drawing, the following are appropriate elective areas: art, guidance, physical education, and athletic coaching.

The 20 credits in mathematics or natural science may be earned in any courses within these two fields in any combination, departmental prerequisites being strictly observed. Students who will plan carefully may attain certification in one of these fields in addition to industrial education, at the same time pursuing subject-matter extremely useful in the specialty.

Requirements above are classified as follows: 50 credits in academic subjects, 24 in education, 38 in industrial education, 30 in shopwork and drawing, 6 in directed teaching, 32 elective (15 may be in shopwork or drawing). Total 180 credits plus 3 credits in physical education. Full requirement, 183 credits.

Students should possess, and make constant reference to more detailed bulletins. They should avail themselves of the help of departmental and college advisers.

LIBRARY METHODS

Major Advisers: F. K. Walter, Lura C. Hutchinson

The following curriculum has been arranged in co-operation with the Division of Library Instruction. It is designed to offer professional library training to prospective teachers who desire such work.

The successful completion of this four-year curriculum will entitle the student to the degree of bachelor of science. Students will also qualify for the Minnesota high school general certificate for teaching academic subjects in junior and senior high schools by completing requirements for a teaching major or for *two* teaching minors in subjects commonly taught in Minnesota high schools. It will usually be wisest to choose majors and minors in the fields of English and history.

Prospective students who are interested in the curriculum should obtain the special bulletin issued by the Division of Library Instruction.

The C+ average is based on the 45 credits in library courses.

Minor.—Students who complete 18 credits selected from Courses 52, 54, 57, 58, 62, 64, 71 will satisfy the requirements for a minor in library training.

FOUR-YEAR CURRICULUM FOR SCHOOL LIBRARIAN*

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

<i>Freshman Year</i>		
Course No.	Title	Credits
Eng. A-B-C	Freshman English	15
or		
Comp. 4-5-6	Freshman Composition (or exemption from the requirement)	9
Hist. 1-2	European Civilization	10
	History	5
	Language	15
Phys.Ed. 1-2-3	General Course in Physical Education	3
	Total	48
<i>Sophomore Year</i>		
Psy. 1-2	General Psychology	6
	Natural Science	10
	Language	5
Phys.Ed. 4-7	General Course in Physical Education	2
	Electives†	24
	Total	47
<i>Junior Year</i>		
Lib.Meth. 52	Cataloging	3
Lib.Meth. 54	Classification	3
Lib.Meth. 62	Reference	3
Lib.Meth. 57	{ Secondary School Libraries Public Library Administration } any two	6
Lib.Meth. 58		6
Lib.Meth. 64		3
Lib.Meth. 71	Library Work with Children	3
Ed. 51A-B-C	Introduction to Secondary School Teaching	9
	Continuation of required elective academic courses†	18
	Total	45
<i>Senior Year</i>		
	Special Methods and Directed Teaching§	9
	Completion of academic requirements—fall, winter, spring.	
	Library courses	27
	Electives in Education†	5
	General electives†	4
	Total	45

* Prospective students who are interested in the curriculum should obtain the special bulletin issued by the Division of Library Instruction.

The tuition fees for full-time students who are enrolled in this specialized curriculum are \$40 per quarter for residents of Minnesota and \$50 per quarter for non-residents. Unclassed students, auditors, and others carrying less than full work in library instruction (15 credits per quarter) pay a tuition fee of \$3 per credit for residents and \$3.50 per credit for nonresidents, for all courses under the supervision of the Division of Library Instruction, irrespective of their registration in courses in other subjects.

† Electives should be selected to meet the requirements of one teaching major or two teaching minors. Electives should also include five credits selected from the list of professional courses on pp. 21-22.

§ Passing the qualifying examination is prerequisite to this course.

MUSIC EDUCATION

Major Advisers: Carlyle Scott, Abe Pepinsky, Hazel B. Nohavec

The course in Music Education is a four-year course leading to the degree of bachelor of science, in which the theoretical, practical, and methods courses in music are combined with the study of English composition, psychology, and such subjects as the College of Education demands as a definite requirement. The object is to provide a well-rounded course for candidates for the bachelor of science degree in music education.

For graduation, women students must earn 185 credits and 185 honor points and men students must earn 183 credits and 183 honor points. They must earn 24 credits in Practical Music (11, 27), 18 of which shall be the minimum requirement for their major subject and six of which must be in a second field other than the major. Either the major or minor must be in voice. (Students not majoring in piano shall be required to take one year of Piano A, B, C, 2 credits per quarter, exemption dependent upon entrance examination.) It is recommended that the practical music requirements be met by the end of the junior year.

A teaching minor in one academic secondary school subject is required for graduation of all music education students. English, history, languages, and social studies are suggested. For advice concerning minors, see departmental advisers.

Elective credits in instrumental music to the extent of 7, may be used.

In addition to the practical and theoretical studies in music this course includes such cultural subjects as English, psychology, sociology, and history, and the professional courses which are prescribed by the College of Education. The music studies are distributed between the instrumental and vocal departments so that, on graduation, a student is capable of being an instrumental, vocal, or general supervisor.

Observation and directed teaching are required in the Minneapolis and St. Paul grade schools, and in the Minneapolis, St. Paul, and University high schools.

Courses upon which the C+ average is based are Mu.Ed. 4-5-6, 50A-50B, 53, 54, 55, 65, 68; Mu. 60, 63.

Following are the specific regulations and requirements applying to this course:

For entrance.—All students wishing to register for the course in Music Education must, upon matriculation, choose a major instrument, and pass an entrance examination in that instrument, before a committee of the faculty of the Music Department. Entrance requirements for a major, according to instruments are:

Piano—Any minor or major scale in octaves, thirds, sixths, or tenths, M.M. quarter notes—108; Bach Invention, or dances from one of the suites; a sonata by Haydn or Mozart; a modern composition of equal difficulty with the sonata.

Voice—Sing on pitch with correct phrasing and musical intelligence standard songs in good English (the simpler classics recommended).

Demonstrate ability to read a simple song at sight and have a knowledge of the rudiments of music and also have a promising voice. Some knowledge of piano is urgently recommended.

Violin—Major and minor scales, arpeggios; the simpler Kreutzer *Etudes*; a sonata by Handel, Haydn, Mozart, or Schubert; a more modern work displaying special technique peculiar to the violin.

Organ—Same as piano.

Students not majoring in piano, will be examined concerning requirements to be met in piano.

Fees.—For statement of special fees see Music and Music Education in the Combined Class Schedule Bulletin.

FOUR-YEAR CURRICULUM IN MUSIC EDUCATION

Freshman and Sophomore Years

Course No.	Title	Credits
Comp. 4-5-6	Freshman Composition	9
Mu. 1,2,3	Ear Training	4
Mu. 4-5	Harmony	6
Mu.Ed. 1	Orientation	0
Mu.Ed. 59	Choral Literature and Conducting	1
	Physical Education	3-5
	Practical Music	12-18
Psy. 1-2	General Psychology	6
Mu.Ed. 4-5-6	Applied Instrumental Technique	6
Mu. 34-35-36	History of Music	6
Hist. 11-12-13	Medieval History	9
	or	
Hist. 1-2	European Civilization	10
Soc. 1	Introduction to Sociology	5
	Academic electives (minor)	14-19
	Total	95

Junior and Senior Years

Mu.Ed. 50A	Primary Methods	2
Mu.Ed. 50B	Intermediate Methods	2
Mu.Ed. 52	Technique of Teaching Appreciation	1
Mu.Ed. 53	High School Methods	3
Mu.Ed. 54	Operetta Production	3
Mu.Ed. 65	Instrumentation	3
Mu.Ed. 70	Accompanying and Sight Reading	2
Mu.Ed. 59	Choral Literature and Conducting	3
Mu. 60	Instrumental Ensemble	2
Mu. 63	Vocal Ensemble	2
Mu. 59	Technique of Voice	2
Mu. 76	Form and Analysis	3
Mu. 40-41-42	Orchestra	6
	or	
Mu. 43-44-45	Chorus	3
Ed. 51A-B-C	Introduction to Secondary School Teaching	9
Mu.Ed. 68	Conducting of Instrumental Music and Survey of Materials	4
Mu.Ed. 61	Survey and Evaluation of Vocal Materials and Methods	4
Mu.Ed. 60-61-62	Supervision and Teaching	9
	Special Methods (Academic minor)	4
	Practical Music	6-12
	Academic electives (Minor)	14-23
	Total	90

REQUIREMENTS FOR A MINOR IN MUSIC EDUCATION

A minimum of 25 credits in music and music education to include the following subjects:

Course No.	Title	Credits
Mu. 1	Ear Training	2
Mu. 4	Harmony	3
Mu. 36	History of Music	2
Mu.Ed. 50A	Primary Methods	2
or		
Mu.Ed. 50B	Intermediate Methods	2
or		
Mu.Ed. 53	High School Methods	3
Mu.Ed. 54	Operetta Production	3
Mu.Ed. 4-5 or 6	Applied Instrumental Technique	2-4

The remaining credits to be selected from the following courses:

Mu. 40-41-42	Orchestra	2
or		
Mu. 43-44-45	Chorus	1-3
Mu. 60,61,62	Instrumental Ensemble	2
or		
Mu. 63,64,65	Vocal Ensemble	2
Mu.Ed. 68	Conducting of Instrumental Music and Survey of Materials	4
or		
Mu.Ed. 59	Choral Literature and Conducting	2
or		
Mu.Ed. 61	Survey and Evaluation of Vocal Materials and Methods	4

NATURAL SCIENCE

General Adviser: Palmer O. Johnson

Special Adviser, Botany, F. K. Butters

Special Adviser, Chemistry, Palmer O. Johnson

Special Adviser, Physics, J. William Buchta

Special Adviser, Zoology, J. E. Wodsedalek

Students preparing to teach science in Minnesota high schools should qualify to give instruction in two or more sciences, since almost all positions open to graduates require teaching in at least two fields. As a matter of fact most Minnesota schools now require instruction in general science, for which the teacher should be trained in both biological and physical sciences. While it is possible to meet the major or minor sequences in one or more of the sciences as in other academic subjects, the following special curriculum in natural science is recommended for those persons desiring to secure the best preparation for the teaching of high school science. It requires:

- A. The completion of a sequence of a minimum of twenty-nine hours in one of the four natural sciences: chemistry, physics, botany, or zoology.
- B. The completion of at least fifteen hours in another science (excepting the one chosen under A) selected from the following: physics, geology, botany, zoology, chemistry.

- C. The completion of at least nine credits in each of the remaining sciences listed under B but not selected to meet requirements A and B. In lieu of 9 credits in geology, 5 credits in geology and 5 credits in astronomy will be accepted. For graduation 10 credits in a social science are also required.
- D. Completion of Ed. 51A-B-C, Ed.T. 68A-B-C, and 8 credits in education electives.

The C+ average is based on the major courses.

BOTANY

Major: Courses 1, 2, 5, 7, 21, 22, 61, 62, and approved electives.

Minor: Courses 1, 2, 7, 21, 22.

CHEMISTRY

Major: Courses 9, 10, 12, 7, 51, 52 or 6, 7, 8, 12, 51, 52 if without high school chemistry.

Minor: Courses 9, 10, 12 or 6, 7, 8, 12.

PHYSICS

Major: Courses 7-8-9, 52, 107-109-111, and three credits of approved electives.

Minor: Courses 7-8-9, 11, and 52.

ZOOLOGY

Major: Courses 1, 2, 3, 52, 53, 75, 83, and Physiology 4.

Minor: Courses 1, 2, 3, 53, 75.

NURSERY SCHOOL AND KINDERGARTEN EDUCATION

See Elementary Education, pages 38-44.

NURSING EDUCATION AND PUBLIC HEALTH NURSING

Major Adviser, Nursing Education: Katharine J. Densford

Major Adviser, Public Health Nursing: Margaret G. Arnstein

The following courses are arranged so as to indicate the minimum requirements for students wishing to secure a bachelor of science degree with a major in nursing. They are planned to prepare the student for such public health nursing positions as visiting nursing, school nursing, health teaching, infant welfare, rural and industrial nursing; for administrative, supervising, and teaching positions in schools of nursing and hospitals; and for combined positions in secondary schools involving both nursing and teaching. In the case of those who choose proper subjects in the College of Education it entitles the graduates to receive a *high school teacher's* certificate.

I. FIVE-YEAR COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE AND GRADUATE IN NURSING

Open to high school graduates who meet the entrance requirements of the College of Science, Literature, and the Arts.

Part I. During the first five quarters of the course the student is registered in the College of Science, Literature, and the Arts, during which time she must complete required subjects.

Course No.	Title	Credits
Eng. A-B-C or	Freshman English	15
Comp. 4-5-6 Science	Freshman Composition (or exemption from the requirement) ... One of these laboratory sciences: chemistry, bacteriology, human anatomy, human physiology, preferably human physiology	9
Soc. 1	Introduction to Sociology	5
Psy. 1-2	General Psychology	6
Phys. 2 or	Elements of Physiology	5
Phys. 4 or	Human Physiology	4
Phys. 51	Human Physiology	6

Electives to make a total of 75 credits exclusive of physical education. (For each five honor points in excess of one honor point per credit, the number is diminished by one. Recommended electives are: history, zoology, chemistry, and more social and natural science.

Physical Education, six quarters. One quarter of this requirement may be completed after registering in the School of Nursing. No credit is granted for physical education courses in the College of Science, Literature, and the Arts; but upon transfer to the College of Education, the student will receive the credits and honor points earned in those courses. Five credits are granted for required physical education courses.

Part II. During the next ten quarters the student is registered in the School of Nursing, taking required subjects and nursing practice as listed in the School of Nursing Bulletin, including Educational Psychology, Ed. 51A 3 credits, and Social Pathology, Soc. 49, 3 credits. Sixty credits are granted for the work taken in the University of Minnesota School of Nursing.

Part III. (College of Education.) During the last three quarters the student selects one of two majors, Nursing Education or Public Health Nursing.

A. Nursing Education has in addition to the primary pattern two variants, namely: child health and nutrition. For any one of these three the student registers in the College of Education. The primary curriculum in Nursing Education prepares for nursing in institutions, administration or teaching in hospitals and schools of nursing. The combination (1) with courses in child health (Institute of Child Welfare) prepares the nurse for work in pediatric work or clinics, work with both well and sick children, or serves as excellent background for nurses who may later seek additional preparation for public health work with children. The combination (2) with nutrition (Home Economics) prepares the nurse for any position in which more than ordinary mastery in this field is desirable.

A. NURSING EDUCATION CURRICULUM (Primary Pattern)

Course No.	Title	Credits
Ed. 51B	Introduction to Secondary School Teaching	3
Ed.T.51A*	Special Methods of Teaching in Schools of Nursing	3
Ed.T.51B	Special Methods of Teaching in the School and Teaching in Schools of Nursing	5
Nurs. 60	Ward Administration	4 or 8
Nurs. 69	Survey of Conditions in Nursing	3
Nurs. 71	Curriculum Making in Schools of Nursing	3
C.W.40	Child Training	3
	Electives*	14 or 18
	Education electives approved by adviser	3
	Total	45

VARIANT FOR THOSE INTERESTED IN CHILD HEALTH

Nursing Courses

Nurs. 60	Ward Administration	4
Nurs. 69	Survey of Conditions in Nursing	3
Nurs. 71	Curriculum Making in Schools of Nursing	3

Education Courses

Ed.T.51A*	Special Methods of Teaching in Schools of Nursing	3
Ed.51B	Introduction to Secondary School Teaching	3

Nursery School Courses

Ed.T. 55	Principles of Early Childhood Education	3
Ed.T. 56	Permanent Play Materials	2
Ed.T. 57	Plastic Materials	3
Ed.T. 58	Rhythms, Games, and Music for the Young Child	2
Ed.T. 59	Story Telling for Young Children	2
Ed.T.75	Methods and Observation in the Nursery School	3
Ed.T.76A-B-C	Methods and Observation	3
	Electives approved by adviser	11
	Total	45

VARIANT FOR THOSE INTERESTED IN NUTRITION

Students taking this curriculum must have completed Home Economics 30 (2 cred.) before entering the School of Nursing.

Nursing Courses

Nurs. 60	Ward Administration	4
Nurs. 69	Survey of Conditions and Trends in Nursing	3
Nurs. 71	Curriculum Making in Schools of Nursing	3

Education Courses

Ed.T.51A	Special Methods of Teaching in Schools of Nursing	3
Ed.T.51B	Special Methods of Teaching in the School and Teaching in Schools of Nursing	5
Ed.51A-B*	Introduction to Secondary School Teaching	6
	Education electives approved by adviser	9

* A qualifying examination covering courses Ed.51A,B, and Nursing 69 as well as examinations in English and in nursing must be passed before registering for Ed.T. 51A.

Home Economics Courses

Course No.	Title	Credits
Agr.Biochem. 4	Introduction to Organic and Biochemistry	5
H.E. 34	Nutrition Problems	4
H.E. 170	Nutrition of the Family	3
H.E. 173	Nutrition in Disease	3
	Total	45

B. PUBLIC HEALTH NURSING

This curriculum leads to the bachelor of science degree with a major in public health nursing and the special high school teacher's certificate in health education. Students who do not wish the teacher's certificate will register during these quarters in the Medical School and should see the Bulletin of the Department of Preventive Medicine and Public Health or the Bulletin of the School of Nursing for the list of required courses.

The following courses are required in addition to the requirements listed under Part I.

Social Science Courses

Course No.	Title	Credits
Soc. 49	Social Pathology	3
Soc. 90,91	Survey and Observation of Social Case Work	5
or		
Soc. 129-130	Principles of Social Case Work	6
	Elective in Sociology or Child Welfare	3
	Social science other than sociology	10

Natural Science Courses

Bact. 41	General Bacteriology	5
or		
Bact. 101	Medical Bacteriology	5
	Science courses (including courses listed in Part I)	15

Preventive Medicine and Public Health Courses

P.M.&P.H. 53	Elements of Preventive Medicine	5
P.M.&P.H. 61	Mental Hygiene	3
P.M.&P.H. 62-63	Principles of Public Health Nursing	6
P.M.&P.H. 65,66,67	Field Practice in Public Health Nursing	11-15
P.M.&P.H.	Electives, minimum	8
	General electives, any department	8

Education Courses

Ed. 51A-B-C	Introduction to Secondary School Teaching	9
Ed.T. 50A-B-C	Special Methods and Supervised Practice in Health Teaching	9
	Electives in education	8

The C+ average is based on all the preventive medicine and public health courses.

II. CURRICULA FOR STUDENTS WHO ARE GRADUATES OF ACCREDITED SCHOOLS OF NURSING

Open to those who meet entrance requirement for specialized curricula of the College of Education (see Bulletin of General Information). Advanced credit for the professional nursing course will be determined by the Committee for the Evaluation of Nursing Credentials which will indicate any

additional hospital services to be completed before credit is granted. Forty-five credits represent approximately the average advanced standing granted for a satisfactory course of study in a school of nursing.

Candidates must conform to the College of Education regulation relative to total credits and honor points and are entitled to the privilege of the quality credit rule. Candidates must also meet the physical education requirements of the College of Education.

To secure a degree in the College of Education students must earn 185 credits and 185 honor points, and in addition must earn 1.5 honor points for each credit in a major field.

Graduate work may be carried and a Master's degree earned by students who meet the requirements of the Graduate School. Programs should be made out in consultation with a major adviser in the department.

The amount and type of college courses to be required of each candidate is to be decided by her major adviser after consideration of a candidate's general education and experience. All programs must also be approved by the Students' Work Committee and the dean of the College of Education. As a rule, however, the following curricula meet the needs of the majority of students. Substitutions may be made by petition upon the recommendation of the major adviser and Students' Work Committee of the College of Education.

A. NURSING EDUCATION

Courses will correspond in general to Part I and Part III—1 (pages 55, 57) of the five-year course plus Ed. 51A and Soc. 49 and such electives, recommended by the major adviser, as may be needed to fulfill the total credit and honor point requirement.

B. PUBLIC HEALTH NURSING

Courses will correspond in general to Part I and Part III—B of the five-year curriculum together with such electives, recommended by the major adviser, as may be needed to fulfill the total credit and honor point requirements.

PHYSICAL EDUCATION FOR MEN

Major Advisers: Louis F. Keller, Edwin L. Haislet, Carl L. Nordly,
Ralph A. Piper

Physical Education 1, 2, and 3, Sports Education courses, are required of all freshmen in the College of Education except physical education majors and minors. See Combined Class Schedule for activities and period schedule.

The following curricula have been designed for men who desire to prepare for teaching and administrative positions in the field of physical education. Completion of either curriculum entitles a student to a Minnesota High School Standard Special certificate.

Two plans are included:

1. Four-year curriculum leading to the bachelor of science degree with a major in physical education.
2. Five-year curriculum leading to the master of education degree with a major in physical education.

A *C+* average (honor point ratio of 1.5) in the major courses and a *C* average (honor point ratio of 1) in the remaining courses must be attained at the end of four years work. A *B* average (honor point ratio of 2) must be maintained for the fifth year.

Students who plan to fulfill requirements for the *bachelor of science* degree and the special teacher's certificate must complete the following:

1. All course requirements numbered below 100.
2. Physical education 101 and 103.
3. Fifteen credits in social studies—economics, history, geography, political science, and sociology.
4. Ed. 51A-B-C.—Introduction to Secondary Teaching.
5. Eight credits from the courses listed under Requirements in Education (p. 21-22).
6. At least one academic teaching minor.
7. Additional courses to complete 183 quarter credits.

Students who plan to obtain the *master of education* degree must fulfill the following:

1. All course requirements numbered below 100.
2. Physical Education 101 and 103 and at least 12 additional credits in courses in Physical Education above 100.
3. Fifteen credits in social studies—economics, history, geography, political science, and sociology.
4. Ed. 51A-B-C.—Introduction to Secondary School Teaching.
5. Twelve credits from the courses listed under Requirements in Education.
6. At least *two* teaching minors or an additional teaching major.
7. Additional courses to complete 228 credits.
8. During the last three years at least 80 credits must be in courses numbered 50 or above and 45 credits in courses numbered 100 and above.

FOUR- AND FIVE-YEAR PROGRAM IN PHYSICAL EDUCATION FOR MEN

Freshman and Sophomore Years

Course No.	Title	Credits
Eng. 4-5-6	Freshman Composition (or A-B-C or exemption)	9
Sp. 1-2	Fundamentals of Speech	6
Chem. 6-7	General Inorganic Chemistry	10
	or	
Chem. 9-10	General Inorganic Chemistry	10
Zool. 1-2-3	General Zoology	10
Psy. 1-2	General Psychology	6
P.M.&P.H. 3	Personal Health	2
Phys.Ed. 4A-B-C	Fundamentals of Athletic Sports	3

The designation "E" after a course number over 100 signifies that the course is of graduate level in the College of Education but does not carry credit for Plans A and B in the Graduate School.

The student must complete six credits or demonstrate proficiency to qualify for exemption and credit in the following courses:*

Phys.Ed. 5A-B-C	Physical Education Activities	3
Phys.Ed. 6A,B,C	Intramural Sports	3

* Total advance credits by special examination limited to 12 credits in physical education.

Junior, Senior, and Fifth Years

Course No.	Title	Credits
Phys.Ed. 50	Human Anatomy	4
Phys.Ed. 51	Mechanics of Movement	3
Physiol. 50	Physiological Chemistry	5
Physiol. 51	Human Physiology	6
P.M.&P.H. 50	Public and Personal Health	3
P.M.&P.H. 59	Health of the School Child	3
Phys.Ed. 53,54,55	Methods and Materials in Physical Education	6
Phys.Ed. 60	Prevention and Care of Injuries	2
Phys.Ed. 63	Organization and Administration of Physical Education	3
Phys.Ed. 67,69	Coaching of Athletic Sports (Football, Track)	4
Phys.Ed. 73,74,75	Practice Teaching	6
Phys.Ed. 83†	Health Education, Method and Content	3
Phys.Ed. 101E	Principles of Physical Education	3
Phys.Ed. 103E	Physiological Hygiene	3

Complete four credits or demonstrate proficiency to qualify for exemption in the following group.*

Phys.Ed. 7A-B-C	Physical Education Activities	3
Phys.Ed. 8	Dual Spring Sports	1
Phys.Ed. 9	Rhythms	1

In addition to the above at least 12 credits are required from the following group in physical education to obtain the M.Ed. degree.

Phys.Ed. 113E†	Physical Education in the Elementary Schools	3
Phys.Ed. 114E†	The Administration of the Health Education Program	3
Phys.Ed. 133E	Special Administrative Problems in Physical Education	3
Phys.Ed. 134E	The Curriculum in Physical Education	3
Phys.Ed. 135E	Tests and Measurements in Physical Education	3
Phys.Ed. 136E	Leadership in Recreation	3
Phys.Ed. 137E	Recent Literature and Research in Physical Education	3

REQUIREMENTS IN EDUCATION

Ed. 51A-B-C	Introduction to Secondary Teaching (B.S. and M.Ed.)	9
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Minimum of 8 credits for B.S. and 12 credits for M.Ed. chosen from the following group:§

Ed. 73	Educational Sociology	3
Ed. 104	Adult Education	2
Ed. 133	Guidance in Secondary Schools	2-3
Ed.Ad. 124	Public School Administration	3
Ed.C.I. 113	High School Curriculum	3
or		
Ed.C.I. 119	Elementary School Curriculum	3
Ed.C.I. 266	Supervision of High School Instruction	3
or		
Ed.C.I. 150	Supervision and Improvement of Instruction	3
Ed.C.I. 169	Extra-curricular Activities	2-3
Ed.Psy. 158	Psychology of Adolescence	3
or		
Ed.Psy. 159	Personality Adjustments in Education	3

* Total advance credits by special examination limited to 12 credits in physical education.

† Courses offered in the Department of Physical Education for Women.

§ Other educational electives may be included in this group to meet the needs of students. See list of approved courses on page 21-22.

Electives in Physical Education

Course No.	Title	Credits
Phys.Ed. 56	Nature and Function of Play	2
Phys.Ed. 61	History of Physical Education	2
Phys.Ed. 66	Methods and Techniques of Officiating	2
Phys.Ed. 68,72*	Coaching of Athletic Sports (Basketball, Baseball)	4
Phys.Ed. 78	Elements of Scout Leadership	2
Phys.Ed. 79	Camp Craft and Camp Administration	2

Transfer students should have transcripts of college credits sent for evaluation to the registrar and to the Department of Physical Education and Athletics.

COURSES FOR MEN MINORING IN PHYSICAL EDUCATION AND ATHLETIC COACHING

Phys.Ed. 5A,B,C	Physical Education Activities	3
Phys.Ed. 6A,B,C	Intramural Sports	3
Phys.Ed. 53,54,55	Methods and Materials in Physical Education	6
Phys.Ed. 60	Prevention and Care of Injuries	2
Phys.Ed. 63	Organization and Administration of Physical Education	3
Phys.Ed. 67,68, 69,72	Coaching of Athletic Sports (Football, Basketball, Track, Baseball)	8

NOTE.—All candidates for teacher's certificate with minor recommendation in physical education must take Phys.Ed. 53, 54, 55, 60, and 63. The balance of 19 credit hours may be secured from any of the courses listed above.

PHYSICAL EDUCATION FOR WOMEN

Major Adviser: J. Anna Norris

The Department of Physical Education for Women offers the following curricula in physical education:

1. Four-year curriculum leading to the bachelor of science degree with a major in physical education.
2. Five-year curriculum leading to the master of education degree with a major in physical education.
3. Curriculum for a teaching minor in physical education.
4. Curriculum to meet the nine quarter-hour state requirement for teachers devoting less than half time to high school teaching in physical education.

GENERAL REQUIREMENTS FOR TEACHING PHYSICAL EDUCATION

The curricula offered by the Department of Physical Education for Women are designed to prepare graduates for the responsible direction of physical education and to provide the training necessary to meet the certification standards of the state of Minnesota for teaching physical education in the elementary and high schools.

* Students without varsity squad experience will be required to take these courses.

Students desiring to register for any of the above curricula should consult with the major adviser. The following qualifications are desirable for the teaching of physical education:

Freedom from organic disease or serious functional disorder.

Motor skill above the average, including at least elementary skill in swimming. (Students who cannot pass the elementary swimming test at entrance should do so during their freshman year.)

Keen sense of rhythm.

Voice adapted to speaking in public.

Qualities of personality which will win the co-operation of others.

Good posture and carriage.

Training in the sciences.

A unit of high school physics is a prerequisite to entrance into the four- or five-year curriculum. High school physics is a prerequisite for Physical Education 51.

Students are required to provide themselves with suits and other equipment in accordance with uniform standards of the department.

Students who have a grade lower than B in posture at the end of the sophomore year must take a course in orthopedic gymnastics in the fall quarter of their junior year.

FOUR-YEAR CURRICULUM LEADING TO A BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN PHYSICAL EDUCATION

A C+ average (honor point ratio of 1.5) in all the physical education courses and a C average (honor point ratio of 1) in the remaining courses must be attained at the end of the four years of work.

Freshman Year

Course No.	Title	Credits
Comp. 4-5-6	Freshman Composition (or Eng. A-B-C, or exemption)	9
Zool. 1-2-3	General Zoology	10
Soc. 1	Introduction to Sociology	5
Hist. 1-2	European Civilization	10
or		
Orient. 1-2-3	Man in Nature and Society	9
Phys.Ed. 7	Lectures in Physical Education and Health	1
Phys.Ed. 21-24	Elementary Physical Education	6½
Phys.Ed. 25	First Aid	1
	Electives (Consult adviser)	3

Sophomore Year

Chem. 1-2	General Inorganic Chemistry	8
Psy. 1-2	General Psychology	6
Sp. 1-2	Fundamentals of Speech	6
Ed. 51A	Introduction to Secondary School Teaching	3
Phys.Ed. 41-47	Intermediate Physical Education	8
Phys.Ed. 50	General Anatomy	4
Phys.Ed. 51	Special Anatomy and Mechanics of Movement	4
	Electives (Consult adviser)	7

Junior Year

Course No.	Title	Credits
Ed. 51B-C	Introduction to Secondary School Teaching	6
Physiol. 50	Physiological Chemistry	5
Physiol. 51	Human Physiology	6
P.M.&P.H. 50	Public and Personal Health	3
Phys.Ed. 60	Principles of Play	3
Phys.Ed. 61A-B-C, 63,64,65,67A-B	Teaching Techniques in Physical Education	9
Phys.Ed. 62	Physical Examination	2
Phys.Ed. 66	Advanced Physical Education	1½
Phys.Ed. 68	Lifesaving and Water Front Safety	1
	Electives (Consult adviser)	11

Senior Year

Ed.Psy. 120	Basic Principles of Measurement	3
Ed.Psy. 158	Psychology of Adolescence	3
Phys.Ed. 71	Applied Physiology	3
Phys.Ed. 73	Teaching Techniques in Physical Education	1
Phys.Ed. 74A-B, 76	Advanced Physical Education	2
Phys.Ed. 80	Principles of Rhythm	2
Phys.Ed. 81	Trends in Physical Education	2
Phys.Ed. 82	Principles of Physical Education	2
Phys.Ed. 83	Health Education, Method and Content	3
Phys.Ed. 84	Problems in Physical Education	2
Phys.Ed. 85A-B	Orthopedic and Remedial Gymnastics	3
Phys.Ed. 90A-B-C*	Student Teaching	4-7
Phys.Ed. 95A-B	Administration of Physical Education	3
	Education electives (Chosen list)	6
	Electives (Consult adviser)	6

**FIVE-YEAR CURRICULUM LEADING TO A MASTER OF EDUCATION
DEGREE WITH A MAJOR IN PHYSICAL EDUCATION**

Students who plan to obtain the master of education degree with a major in physical education should make this decision upon the completion of their second year as majors in physical education in order that their next three years may be properly integrated and directed.

Students with a bachelor of science degree with a major in physical education from other accredited institutions upon fulfilling the requirements for the fifth year may receive the master of education degree with a major in physical education.

At least one teaching minor should be completed at the undergraduate level in order to have partially fulfilled the credit requirements for a minor at the graduate level.

A B average (honor point ratio of 2) must be attained for the fifth year.

Courses in physical education numbered over 100 may be taken either in the Department of Physical Education for Women or the Department of Physical Education for Men.

* For a four-year major in physical education 7 credits are required in student teaching. If a student is continuing the fifth year 4 credits in student teaching are required during the fourth year and 3 credits during the fifth year.

The designation "E" after a course number over 100 signifies that the course is of graduate level in the College of Education but does not carry credit for Plans A and B in the Graduate School.

Fifth Year

		Credits
General academic field (These credits may be applied to the graduate minor.)		6-12
Education		6-12
Suggested courses: Ed.Psy. 158; Ed.C.I. 119, 160		
Physical Education		24
Course No.	Title	Credits
Phys.Ed. 110E†	Student Teaching	3
Phys.Ed. 111E†	Advanced Course in Methods of Teaching Physical Education	3
Phys.Ed. 112E†	Supervision of Physical Education	3
Phys.Ed. 113E†	Physical Education in the Elementary Schools	3
Phys.Ed. 114E†	Administration of the Health Education Program	3
Phys.Ed. 115E†	Recent Literature and Research in Mechanics of Movement	3
Phys.Ed. 133E*	Special Administrative Problems in Physical Education	3
Phys.Ed. 134E*	Curriculum in Physical Education	3
Phys.Ed. 135E*	Tests and Measurements in Physical Education	3
Phys.Ed. 136E*	Leadership in Recreation	3
Phys.Ed. 137E*	Recent Literature and Research in Physical Education	3

REQUIREMENTS FOR A MINOR IN PHYSICAL EDUCATION FOR WOMEN

Course No.	Title	Credits
Physical Education Activities		7
This includes 5 credits in physical education required for graduation from the College of Education plus 2 additional credits which may be chosen from either the general physical education course or from activities courses in the major curriculum in Physical Education for Women.		
Technique courses		3-5

Choice of any three courses from the following list. (Consult adviser for guidance in this choice.)

Phys.Ed. 61A-B-C	Technique of Teaching Sports	3
Phys.Ed. 63	Technique of Teaching Folk Dancing	3
Phys.Ed. 64	Technique of Teaching Group Gymnastics	1
Phys.Ed. 67A-B	Technique of Teaching Swimming	2
Phys.Ed. 73	Technique of Teaching Rhythm	1
Health courses		1-3

Choice of any one course from the following list:

P.M.&P.H. 50	Public and Personal Health	3
P.M.&P.H. 3	Personal Health	2
Phys.Ed. 39	Introduction to Health	1
Required courses		8
Phys.Ed. 55	Introduction to Physical Education	3
(This course is also offered during the Summer Session as Phys.Ed. 38su)		
Phys.Ed. 60	Principles of Play	3
Phys.Ed. 65	Integration of Special Methods	2

19-23

* Courses offered in the Department of Physical Education for Men.

† Courses offered in the Department of Physical Education for Women.

NINE QUARTER-HOURS STATE REQUIREMENT FOR PART-TIME
TEACHERS OF PHYSICAL EDUCATION IN HIGH SCHOOLS

For the certification of part-time physical education teachers in high schools only, a teacher who devotes less than half time to high school physical education teaching shall have a minimum of nine quarter-hours of training for this work. This requirement has been set up by the State Board of Education for the purpose of providing teachers of part-time high school physical education with a minimum amount of professional preparation in physical education. It includes an introduction to physical education involving such content as elementary principles, history, and organization and administration. It also includes experience in, as well as methods of, teaching those activities which are most frequently used in the physical education program.

See Summer Session Bulletin for courses to meet this requirement. It is possible to complete the nine credits in one Summer Session, but it will make unusual demands upon the vitality of the student.

Course No.	Title	Credits
Technique of Teaching		4-6

A background of appropriate skills is a prerequisite for any of these techniques courses, i.e., a background of elementary skill in folk dancing is a prerequisite to the Technique of Teaching Folk Dancing.

Choice of 4 to 6 credits from the following list:

Phys.Ed. 61A-B-C	Technique of Teaching Sports	1-3
Phys.Ed. 63	Technique of Teaching Folk Dancing	1
Phys.Ed. 64	Technique of Teaching Group Gymnastics ..	1
Phys.Ed. 73	Technique of Teaching Rhythm	1
Theory		3-5
Phys.Ed. 55	Introduction to Physical Education	3

Consult adviser for additional courses in theory.

Required college or university physical education courses	2
(Six quarters selected from Phys.Ed. 1 through 8)	

RECREATIONAL LEADERSHIP

Major Advisers: C. Gilbert Wrenn, Carl L. Nordly

This curriculum, leading to the degree of bachelor of science in education with a major in recreation, is the result of eighteen months' study by a committee appointed by the president of the University. It is supervised by a committee appointed jointly by the president and the dean of the college, consisting of Professor C. Gilbert Wrenn, chairman, Dean Malcolm Willey, Dean E. M. Freeman, Professor C. W. Boardman, Professor T. R. McConnell, and Assistant Professor Carl L. Nordly. The present outline of the curriculum is experimental in nature, since recreation is a somewhat new field of university training and both the committee and the college reserve the right to make major changes in the curriculum as experience may dictate. Such changes will, of course, protect the programs of students registering under its present provisions. Only a limited number of students will be admitted to the junior year of the curriculum in 1938-39.

The professional curriculum begins with the junior year. Students will be selected for entrance to that year in terms of the following criteria:

1. Ninety units of college credit, exclusive of required physical education courses, distributed as follows:

	Minimum Units
a. Biology and psychology (both represented)	12
b. Physical sciences	12
c. Social sciences (must include sociology, political science, and history)	19
d. English composition and speech	12
e. Skills courses in one or two of the following fields: art and crafts, music, physical education,* and dramatics	12
f. Sociology 47, Leisure in the Modern World	3
g. General College 129, Survey of Recreation Activities	2
h. Additional electives in fields a-e	18

90

2. Minimum of C average over all college work taken.
3. Entrance examination in recreation trends and activities.
4. Evidence of leadership qualities upon basis of extra-classroom experience during high school and college, health examination, and personal interview.

Lower division courses may be selected from offerings in the College of Science, Literature, and the Arts, the General College, or the four-year curricula in Physical Education, Music Education, and Art Education. Students registered in the lower division of the various colleges and curricula should seek their advisers for this curriculum as follows:

College of Science, Literature, and the Arts: inquire at 106 Folwell Hall
 General College: inquire at 200 Wesbrook Hall
 Physical Education: Mr. Haislet
 Music Education: Mrs. Nohavec
 Art Education: Mr. Faulkner

Students transferring from other institutions will be permitted some deviation from the lower division pattern listed in (1) and will be exempted from the specific course requirements (f) and (g) under (1) above, but they must take the entrance examination provided for in (3) above.

Upper division students in the University or transfers from other institutions desiring to major in recreation in 1938-39 may register in that curriculum in the fall quarter of 1938-39, but with the provision that this is a tentative registration only. During the fall quarter they will be asked to submit evidence of leadership qualities and will be required to take the entrance examination in recreation trends. A study of these data and of the lower division records of the students so registered will enable the committee responsible for the curriculum to select those who will be permitted to remain in the curriculum after the fall quarter. Only those students whose own examination of their lower division work give them some assurance that they have met the requirements under (1) and (2) above are encouraged to regis-

* The College of Education requires for graduation: men, Phys.Ed. 1, 2, 3. Sports Education for Men, 3 cred.; women, Phys.Ed. 1, 2, 3, 4, 5, 6, 7. General Course in Physical Education, 5 cred. These courses may be used in group requirement (e) thus adding the possibility of 3 elective credits for men and 5 for women.

ter. For those registering in 1938-39 a wide latitude of interpretation will be given to the lower division pattern of courses listed under (1) above. These students should enroll for Sociology 47, Leisure in the Modern World, and G.C. 129, Survey of Recreation Activities. They will be given credit for these lower division courses in this, the first experimental year. of the curriculum.

All sophomore students considering the field of recreation as a profession or those who wish to know about leisure problems and opportunities for their personal satisfaction should take Sociology 47 and G.C. 129. The total pattern of lower division courses outlined, including these two in particular, are designed to provide an "education for leisure." Such a program as this provides a nucleus of educational experience that will enable one to live more satisfyingly in a world that increasingly demands social understanding and rich inner resources of creative expression.

MAJOR IN RECREATIONAL LEADERSHIP

This major is designed to enable a student to secure the teaching certificate, if desired, as well as to meet graduation requirements for the College of Education. The teaching certificate should include preparation in one teaching minor as well as in recreation.† Possible minors are physical education, music education, art education, or social studies. With careful program planning a student should be able to meet the requirements of the curriculum as well as the requirements for a teaching certificate in the normal period of six quarters. The following are the requirements for the junior and senior years in the College of Education.

I. PSYCHOLOGY AND EDUCATION

A minimum of eighteen credits is required.

Group A—Two courses required:

No.	Title	Credits	Prerequisite
Ed. 51A-B-C	Introduction to Secondary School Teaching	9	6 cred. in psy.
Ed. 104	Adult Education	2	None

Group B—One course required:

Ed.Psy. 158	Psychology of Adolescence	3	Ed.51A or equiv.
Ed.Psy. 159	Personality Adjustments in Education	3	Ed.51A or equiv.
Psy. 125-126	Psychology of Individual Differences	6	Psy. 1-2; 4-5 or 7, or 5 cred. in statistics

Group C—One course required:

Soc. 100	Social Psychology	3	Soc. 1 and 6 or Psy. 1-2 and 9 cred. in soc. sci., ed., phil., or psy.
Psy. 130	Vocational Psychology	2	9 cred. in psy.
Psy. 140	Social Psychology	3	9 cred. in psy. or 6 cred. in psy. and either Zool. 1-2-3 or 12 cred. in soc.

† A second minor is recommended. Students should consult certification laws of the state in which they expect to teach.

No.	Title	Credits	Prerequisite
Psy. 141	Political Psychology	3	9 cred. in psy.
Psy. 160	Psychology in Personnel Work	3	Psy. 1-2 and Econ. 1-2 or 9 cred. in pol. sci.
Group D—One course required:			
Psy. 72	Psychology of the Fine Arts	3	Psy. 1-2
C.W. 130	Motor, Linguistic, and Intellectual De- velopment of the Child	3	12 cred. in psy. or equiv.
C.W. 131	Personality, Emotional, and Social De- velopment of the Child	3	12 cred. in psy. or equiv.
Ed.C.I. 122	Literature for Adolescents	2	Ed. 51C or junior- senior high school teaching experience
Ed.C.I. 169	Extra-curricular Activities	2	10 hrs. in ed. includ- ing Ed. 51A
Phys.Ed. 135	Tests and Measurements in Physical Ed- ucation	3	10 hrs. in phys. ed. and Ed.Psy. 60 or equiv.

II. SOCIOLOGY AND GROUP WORK

A minimum of eighteen credits is required.

Group A—Required courses:

No.	Title	Credits	Prerequisite
Phys.Ed. 136E	Leadership in Recreation	3	10 hrs. in ed.
Soc. 146	Community Organization and the Social Setting of Recreation	3	3 courses in soc. sci. including Soc. 47
Soc. 147	Group Leadership and Organization	3	Soc. 146
Soc. 148	Supervisory Problems in Recreation	3	Soc. 147

Group B—Elective courses:

Soc. 49	Social Pathology	3	10 cred. in soc. or Soc. 1 and 10 cred. in soc. sci. or psy.
Soc. 60	Social Protection of the Child	3	Soc. 49
Soc. 90	Survey of Social Work	3	Soc. 49
Soc. 101	Social Organization	3	Four courses in soc. or Soc. 1 and 15 cred. in soc. sci., ed., phil., or psy.
Phys.Ed. 56*	Nature and Function of Play	2	Psy. 1-2
or			
Phys.Ed. 60†	Principles of Play	2	Phys.Ed. 23A-B† and Psy. 1-2
Phys.Ed. 66A-B*	Methods and Techniques of Officiating	2	4A-B-C and 6A-B-C
Phys.Ed. 78*	Elements of Scout Leadership	2	None
Phys.Ed. 79*	Camp Craft and Camp Administration	2	None
or			
Phys.Ed. 54†	Camp Leadership	2	None

* Courses offered in Department of Physical Education for Men.

† Courses offered in Department of Physical Education for Women.

III. PREVENTIVE MEDICINE AND PUBLIC HEALTH AND FIRST AID

A minimum of seven credits including one of the two italicized courses is required.

No.	Title	Credits	Prerequisite
P.M.&P.H. 50	Public and Personal Health	2	None
P.M.&P.H. 59	Health of the School Child	3	P.M.&P.H. 50 or 52, or 53
P.M.&P.H. 61	Mental Hygiene	3	P.M.&P.H. 50 or 52, or 53 and 62 which may be taken concurrently
<i>Phys.Ed. 60*</i>	<i>Prevention and Care of Injuries</i>	2	None
or			
<i>Phys.Ed. 83†</i>	<i>Health Education, Method and Content</i>	3	Phys.Ed. 65, P.M.&P.H. 50

IV. ADVANCED SKILLS AND THEIR APPLICATION

A minimum of fifteen credits is required.

Group A—Games, sports, dances, and social recreation:

Minimum of five credits in advanced physical education skills and their application.

Group B—Advanced skills courses and their application in music, arts and crafts, and dramatics:

Minimum of ten credits.

V. STUDENT TEACHING AND PRACTICE IN RECREATION LEADERSHIP

A minimum of fifteen credits if teaching minor is elected; nine if graduating only with major is required.

	Credits
Special methods and student teaching in minor	9
Practice and field work in recreation leadership	6

VI. PARTICIPATION IN LEARNING FROM CAMPUS ACTIVITIES

Without credit.

VII. ELECTIVES

General electives	7
Total	90

MINOR IN RECREATIONAL LEADERSHIP

The minor is provided for students who wish to prepare for discharging recreation responsibilities as a minor or supplementary phase of their teaching or other work. It will count as a minor for a teaching certificate or as a minor for graduation. All students who expect to assume responsibility for extra-classroom activities in school or any form of community recreational activity, or who may anticipate wishing to act as a lay recreational leader in a community, should find this minor profitable.

* Courses offered in the Department of Physical Education for Men.

† Courses offered in the Department of Physical Education for Women.

I. PSYCHOLOGY AND EDUCATION

A minimum of three credits is required.

No	Title	Credits	Prerequisite
C.W. 82	Later Childhood and Adolescence	3	40 or 80 or equiv.
Ed.Psy. 158	Psychology of Adolescence	3	Ed.51A or equiv.
Ed. 104	Adult Education	2	None
Ed.C.I. 169	Extra-curricular Activities	2	10 hrs. in ed. including Ed.51A

II. SOCIOLOGY AND GROUP WORK

A minimum of ten credits including italicized courses is required.

<i>Phys.Ed. 136E</i>	<i>Leadership in Recreation</i>	3	10 hrs. in ed.
<i>Soc. 146</i>	<i>Community Organization and the Social Setting of Recreation</i>	3	3 courses in soc. sci. incl. Soc. 47
Phys.Ed. 56*	Nature and Function of Play	2	Psy. 1-2
or			
Phys.Ed. 60†	Principles of Play	3	Phys.Ed. 23A-B† and Psy. 1-2
Phys.Ed. 78*	Elements of Scout Leadership	2	None
Phys.Ed. 79*	Camp Craft and Camp Administration	2	None
or			
Phys.Ed. 54†	Camp Leadership	2	None

III. PREVENTIVE MEDICINE AND FIRST AID

A minimum of one credit is required.

P.M.&P.H. 2	First Aid	1	None
Phys.Ed. 25†	First Aid	1	None
Phys.Ed. 60*	Prevention and Care of Injuries	2	None
Phys.Ed. 83†	Health Education, Method and Content	3	Phys.Ed. 65†, P.M.&P.H. 50

IV. ADVANCED SKILLS AND THEIR APPLICATION

	Credits
Minimum of ten credits in two fields including four credits in physical education and minimum of four credits in one other skills field	10

V. PRACTICE AND FIELD WORK IN RECREATION LEADERSHIP

Not required in 1938-39	3
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VI. PARTICIPATION IN, AND LEARNING FROM, CAMPUS ACTIVITIES

Without credit.

VII. ELECTIVES

Electives	3
Total	30

* Courses offered in Department of Physical Education for Men.

† Courses offered in Department of Physical Education for Women.

SOCIAL STUDIES

Major Adviser: Edgar B. Wesley

The secondary teacher of the social studies is seldom given an opportunity to devote his entire schedule to one special subject. Prospective teachers are therefore urged to take some work in each of the social studies. The following programs are designed to furnish a diversified preparation. The social studies program outlined below covers both the major and the minor but according to the regulations of the State Department of Education a major or a minor (18 credits) is required for teaching history in high school.

Major.—The course requirements for a major in the social studies are prescribed under A and B below:

- A. The student must select one of the five fields listed and must complete the course requirement indicated.
 1. Economics, 30 credits including Courses 6-7, 3, 103-104, 161, 141, and at least 3 credits chosen from the following: 160, 154, 54, 176, 191-192, and 149.
 2. Geography, 28 credits, composed of Courses 11, 41, 53, 71, 101, 110, 120, and 111.
 3. History, 36 credits, 18 of which must be from the Senior College.
 4. Political science, 30 credits.
 5. Sociology, 30 credits.
- B. In addition to the requirements set forth under A the student must secure a total of 25 credits selected from the subjects listed under A. Note the following limitations: Not fewer than 5 credits may be chosen from any one field, and no field selected under A may be used to meet the B requirement.

The C+ average is based on the 30-36 credits in the core subject.

Minor.—Those who major in some other subject or field may secure a minor in the social studies. The course requirements for a minor in the social studies are 35 credits divided among at least three subjects selected from the five listed under A above. The distribution should approximate 15 credits in history (except for those who major in history) and 10 in each of the two other fields chosen. A variation not to exceed 3 credits within the fields chosen will be permitted as long as the total of 35 credits is maintained. A student may not have both a major and a minor in the social studies.

SPEECH PATHOLOGY

Major Adviser: Bryng Bryngelson

This program of study has been arranged for those students who are interested in children with speech disorders. The training in this specialized field is designed to qualify students for professional work in speech correction in schools, hospitals, private clinics, and in child guidance clinics.

The program is arranged for five years of study. The required courses are listed below. Students interested in this field should consult the major adviser before registering. All electives selected to complete the work for a degree should have the approval of the adviser. Junior and senior electives should be selected from the following: Psy. 84, Soc. 52, 49, C.W. 40, 82, 90, 170, P.M.&P.H. 57 or 53.

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

Freshman and Sophomore Years

Course No.	Title	Credits
Comp. 4-5-6	Freshman Composition (or English A-B-C or exemption)	9
Phys.Ed. 1-7	General Course in Physical Education	5
Zool. 1-2-3	General Zoology	10
Psy. 1-2	General Psychology	6
Sp. 1-2-3	Fundamentals of Speech	9
Psy. 4-5	Introductory Laboratory Psychology	4
Zool. 83	Introduction to Genetics and Eugenics (Optional)	3
Zool. 21	Histology (optional—recommended for those minoring in zoology)	5
Physiol. 2	Elements of Physiology	5
HumanAnat. 3	Elementary Anatomy	3
	Electives	36
	Total	95

COLLEGE OF EDUCATION

Junior and Senior Years

Course No.	Title	Credits
Sp. 61	Speech Correction	3
Sp. 67	Phonetics	3
Sp. 162-163	Speech Pathology	6
Psy. 144-145 or 113	Abnormal Psychology	6 or 3
Psy. 151-152 or	Animal Psychology	6
Psy. 52	Genetic Psychology	3
Ed.Psy. 60	Introduction to Statistical Methods	2-3
Ed.Psy. 142	Construction and Use of Individual Aptitude Tests	3
Ed. 61A-B-C	Introduction to Elementary School Teaching	9
Ed.C.I. 145	Remedial Reading	2
Ed.C.I. 174-175-176*	Clinical Methods and Practice in Speech Pathology	9
C.W. 80	Child Psychology	3
	Elective in Child Welfare	3
Ger. 108	Phonetics (Optional)	3

The C+ average is based on the following courses: Sp. 61, 67, 162-163; Ed.Psy. 60, 142; Ed.C.I. 174-175-176; C.W. 80.

Graduate School (Fifth Year)

The fifth year of this curriculum is devoted to graduate work. See Graduate School Bulletin for detailed requirements. Only those having at least a "B" average in undergraduate work will be considered for graduate study. The major, consisting of at least 18 credits, should be selected on approval of major adviser from the following:

Sp. 121-122, 141-142, 261-262-263; Psy. 114-115, 125-126; Zool. 170-171; Ed.Psy. 149-150, 146-147; C.W. 130.

A minor selected from courses in education, psychology, zoology, child welfare, or physiology is recommended.

* Passing the qualifying examination is prerequisite for this course.

TEACHERS OF SUBNORMAL CHILDREN

Major Adviser: Guy L. Bond

Students who complete the freshman and sophomore years of this course, who have had two years of teaching experience in elementary schools, and who complete a minimum of six credits in approved courses of the junior and senior years, will qualify for a special teaching certificate required of teachers of subnormal children, in special classes for which state aid is received. All students who have not had the equivalent previously must take the courses in directed teaching and handwork to qualify them for this special certificate.

Unclassed students with proper prerequisites may pursue courses for which they are qualified in the junior and senior years, on the basis of previous training and experience.

The C+ average is based on Ed.61A-B; Ed.Psy. 142, 184; Ed.T. 54A-B; Ed.C.I. 133, 145; C.W. 80; Soc. 49, 60.

FOUR-YEAR CURRICULUM FOR THE TEACHERS OF
SUBNORMAL CHILDREN

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

Freshman Year

Course No.	Title	Credits
Eng. A-B-C	Freshman English	15
or		
Comp. 4-5-6	Freshman Composition (or exemption from the requirement)	9
ArtEd. 1-2-3	Fundamental Experiences in Design	9
Zool. 1-2-3	General Zoology	10
Soc. 1	Introduction to Sociology	5
	Physical Education	3
	Electives*	6-12

Sophomore Year

Course No.	Title	Credits
Psy. 1-2	General Psychology	6
Psy. 4-5	Introductory Laboratory Psychology	4
Hist. 1-2	European Civilization	10
Ind. 11	Special-Class Woodwork	2
ArtEd. 32	Handicraft—Paper	1
ArtEd.	Handicraft	1
ArtEd. 37	Handicraft—Reed and Raffia	1
Phys.Ed. 23A or B	Elementary Folk Dances and Games	1/2
Sp. 1-2	Fundamentals of Speech	6
	Physical Education	2
	Electives*	13

* Electives should be chosen upon recommendation of the major adviser.

COLLEGE OF EDUCATION

COLLEGE OF EDUCATION

Junior Year

Course No.	Title	Credits
Ed. 61A,B,C†	Introduction to Elementary School Teaching	9
Ed.Psy. 60	Introduction to Statistical Methods	2-3
Ed.Psy. 158	Psychology of Adolescence	3
or		
C.W. 82	Later Childhood and Adolescence	3
Ed.Psy. 184	Mental Deficiency	2
Phys.Ed. 60	Principles of Play	3
Soc. 49	Social Pathology	3
Soc. 60	Social Protection of the Child	3
C.W. 80	Child Psychology	3
	Electives*	16-17

Senior Year

Course No.	Title	Credits
Ed.T. 53§	Directed Teaching of Subnormal Children	5
Ed.T. 54A,B†§	Teaching of Elementary School Subjects	10
Ed.Psy.120	Basic Principles of Measurement	3
Ed.Psy. 142	Construction and Use of Individual Aptitude Tests	3
Ed.C.I. 145	Remedial Reading	2
Ed.C.I. 159	Supervision and Teaching of Reading	2
Ed. 133	Guidance in Secondary Schools	2-3
Soc. 90	Survey of Social Work	3
Soc. 91	Field Observation of Social Work	2
	Electives*	12-13

THEORY AND PRACTICE OF TEACHING

Major Advisers: Dora V. Smith, Edgar B. Wesley

GRADUATE WORK

FIFTH YEAR FOR ENGLISH TEACHERS IN THE THEORY AND PRACTICE OF TEACHING

English teachers may secure a Master's degree with a major in theory and practice teaching and a supporting minor in English. Courses applicable to the teaching of English from which the student may profitably choose are as follows: Ed.C.I. 113, 122, 133, 193, 294, 296-297; Ed. 169, 208; Ed.Psy. 158. The seminar, Ed.C.I. 222-223-224, is required without credit for all students with a major or minor in theory and practice of teaching under Plan A. Programs should be arranged in consultation with a major adviser in the department.

FIFTH YEAR FOR TEACHERS OF SOCIAL STUDIES

Social studies teachers may secure a Master's degree with a major in education or in theory and practice of teaching and a minor in history, economics, political science, geography, or sociology. Courses which are recom-

* Electives should be chosen upon recommendation of the major adviser.

† Teachers with experience upon the recommendation of the major adviser, should take other courses in educational psychology and education, including Ed.C.I. 119, 150, 151 and 181.

§ Passing the qualifying examination is prerequisite to this course.

mended as fitting into this plan are Ed.C.I. 154, 168, 201-202-203, 293, Ed. 240-241-242, Ed. 208. The seminar Ed.C.I. 222-223-224, is required without credits for all students with a major or minor in theory and practice of teaching under Plan A. Programs should be arranged in consultation with the major adviser in social studies.

VISITING TEACHERS

Major Adviser: Edgar B. Wesley

The work of the visiting teacher is social work in the schools for the development of the individual child through adjustment of school-home problems, utilizing the special techniques of social work which are required through theory courses and field training. Those students interested in further information regarding social work are referred to the special bulletin of the Training Course for Social and Civic Work.

The C+ average is based on all required courses of the junior and senior years.

FOUR- AND FIVE-YEAR CURRICULUM FOR VISITING TEACHERS

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

Freshman Year

Course No.	Title	Credits
Eng. A-B-C	Freshman English	15
or		
Comp. 4-5-6	Freshman Composition (or exemption)	9
Hist. 1-2	European Civilization	10
Bot. 1-2	General Botany	7
Zool. 1-2-3	General Zoology	10
Phys.Ed. 1-2-3	General Course in Physical Education	3
	Electives	3 to 9
	Total	48

Sophomore Year

Course No.	Title	Credits
Econ. 6-7	Principles of Economics	10
Hist. 7-8-9	American History	9
Pol.Sci. 1-2-3	American Government and Politics	9
Psy. 1-2	General Psychology	6
Soc. 1	Introduction to Sociology	5
Soc. 6	Social Interaction }	3
or		
Soc. 14	Rural Sociology }	3
Soc. 49	Social Pathology }	
	Physical Education	2
	Total	47

COLLEGE OF EDUCATION

COLLEGE OF EDUCATION

Junior Year

Course No.	Title	Credits
Ed. 51A-B-C	Introduction to Secondary School Teaching	9
Soc. 45	Social Statistics	5
P.M.&P.H. 50	Public and Personal Health	3
P.M.&P.H. 61	Mental Hygiene	3
H.E. 89	Home Management with Special Reference to Low Income Families	3
	Electives in Education	3
	General electives	19
	Total	45

Senior Year

Course No.	Title	Credits
Ed.T. 68Am-Bm*	Methods of Teaching of Secondary School Science	4
Ed.T. 69Am-Bm*	Special Methods in History and Social Studies	4
Ed.Ad. 124	Public School Administration	3
Ed.Ad. 125	Techniques in Administration	3
Soc. 60	Social Protection of the Child	3
Soc. 90	Survey of Social Work	3
Soc. 91	Field Observation of Social Work	2
Econ. 161	Labor Problems and Trade Unionism	3
Soc. 53	Elements of Criminology	3
Psy. 144-145	Abnormal Psychology	6
	Electives	17
	Total	45

FIFTH YEAR IN GRADUATE SCHOOL

The program should be selected in conference with the major adviser. The following courses are suggested. For general requirements see Bulletin of the Graduate School.

Course No.	Title	Credits
Soc. 129-130	Principles of Social Case Work	6
Soc. 131	Rural Social Work	3
Soc. 137	History and Theory of Social Work	3
Soc. 139	Psychiatric Problems in Social Case Work	3
Soc. 153-154	Field Training in Case Work	4-10
	Education as a minor (Consult adviser)	

* Passing the qualifying examination is prerequisite to this course.

DESCRIPTION OF COURSES

An asterisk (*) after graduate course numbers indicates courses that may be taken for independent work under Plan B for the Master's degree.

A dagger (†) indicates that all quarters of the course must be completed before credit is given for any quarter.

GENERAL COURSES

COURSES FOR UNDERGRADUATE STUDENTS

- Ed.51A-B-C.†† Introduction to Secondary School Teaching. Objectives, organization, curricula, and methods of secondary schools and instruction with special reference to the fundamental facts of psychology involved therein. A combination and integration of topics commonly treated in courses in educational psychology, principles of education, and general secondary school methods. Unit A, Psychological fundamentals; Unit B, Methods of instruction; Unit C, Organization, objectives, materials.
- Ed.51A-B-C.†† Introduction to Secondary School Teaching—Independent Study. See above for description. Previously designated Limited Honors Course. The group will not meet each week but one class period a week will be arranged for conference. An average of B and permission of the instructor is required for registration in this course.
- Ed.54-55-56. Fundamental Experiences in Art. Enjoyment of the visual arts and experience in using the "art way" in everyday choices. Activities giving familiarity with materials and processes may be elected but no technical facility is required. Contact for superintendents, supervisors, and teachers in the general field of education with this so-called "special subject." Same as ArtEd. 54-55-56.
- Ed.61A-B-C.†† Introduction to Elementary School Teaching. Objectives, organization, curricula, and methods of elementary schools and instruction with special reference to the fundamental facts of psychology involved therein. A combination and integration of topics commonly treated in courses in educational psychology, principles of education, and general elementary school methods. Unit A, Psychological fundamentals; Unit B, Organization, objective, materials; Unit C, Methods of instruction.
- Ed.W. Professional Preparation for Teaching. This course is designed for students already holding a baccalaureate degree and desiring to complete their preparation for teaching. Such students should consult the adviser and outline an entire program covering at least three quarters of study for completion of work for a teacher's certificate. The entire course totaling 45 credits, including the final examinations, must be successfully completed before credit is given for any quarter.
- Ed.71. Brief Course in History of Education. Current school problems and educational theories in the light of their history. Emphasis upon 18th and 19th centuries and education in the United States.

† The entire course including the final examination covering all units must be successfully completed before credit is received for any quarter.

‡ A fee of \$1 per credit is charged for Courses 51B and 61A,B,C.

- Ed.73. Educational Sociology. A study of the effects of recent social trends upon American educational institutions and of the chief problems in educating individuals for their associations and in directing educative forces of society.
- Ed.75. Public Education in the United States. A survey of historical factors influencing public education in the United States, followed by a study of the development of educational theory and the rise of state systems. A course in the history of education.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- Ed.101. Historical Foundations of Modern Education. Historical analysis and interpretation of the more important elements in modern education derived from the Greeks, Romans, Ancient, Hebrew, Middle Ages, and Renaissance.
- Ed.102. History of Modern Secondary and Higher Education. A historical study of the origin, aims, growth of existing types of American and European secondary schools.
- Ed.103. History of Modern Elementary Education. The development of educational theory and the evolution of the common school. Not open to students who have had Ed. 71.
- Ed.104. Adult Education. An examination of the main lines of development in the fields of adult education, with special attention to principles of adult learning, methods of teaching adults, and the organization of adult education programs.
- Ed.105. Visual Aids in Teaching . A study of the characteristics, advantages, limitations, and practical schoolroom use of visual aids of both non-projection and projection types. Gives specific laboratory practice in operation of usual projection machines. Provides information on sources of materials available for all grade levels and includes demonstrations of practical uses of visual aids in various school subjects. Is intended as a definite means of working out solutions to individual visual aid problems.
- Ed.129-130. Educational Classics. An intensive study of selected writings of educational leaders from ancient times to the present day.
- Ed.131-132. Comparative School Systems. A survey of the existing school systems in foreign countries including France, England, Germany. Emphasis upon present problems.
- Ed.133. Guidance in Secondary Schools. Basic principles and current practices in educational and vocational guidance in junior and senior high schools. Application of principles through case discussions.
- Ed.167. The Junior High School. Sources of the movement; theory, purposes, functions, and limitations; types of reorganization; fundamental problems of reorganization; reorganization of subject-matter.
- Ed.199. Organization and Supervision of Vocational Education. A general course to consider objectives, methods, operation, and supervision of vocational education in the public schools, with special emphasis on agricultural education. Especially for superintendents, principals, and supervisors of vocational education.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- Ed.205. Problems in Adult Education.
- Ed.208.* Methods in Educational Research. A study of the methods employed in the investigation and report of educational problems. Designed to aid students in the preparation of theses. Suggested for all candidates for graduate degrees.
- Ed.211-212-213. Seminar in History of Education. Historical investigation of educational problems.
- Ed.224-225-226. Seminar in Elementary School Problems.
- Ed.228-229-230.* Problems of College Education. Problems of student personnel, of college curricula and instruction, of organization and administration.
- Ed.231.* Problems in Comparative Education.
- Ed.233.* Problems in Guidance and Personnel Work.
- Ed.241-242-243.* Problems in the History of Education.
- Ed.250. Higher Education in the United States. A survey of the historical development of institutions of higher education and a consideration of the following topics: the functions of higher education in a democracy; types of higher institutions; the articulation of secondary and higher education; readjustments in organization and administration, curriculum and instruction; the control of higher education; the evaluation of higher institutions by accrediting agencies. This course is designed as an introduction to the sequence of courses in higher education and is also designed for graduate students in academic fields who wish a survey of the problems of colleges and universities.
- Ed.251. Curriculum and Instruction in Higher Education. The following topics will be considered: educational principles and theories underlying present curriculum practices; the functional relationship of curriculum and aims; relating the curriculum to student needs and characteristics; the curriculum as a whole; the curriculum for general education and for advanced and special education, and the improvement of instruction.
- Ed.252. Student Personnel Work in College and University.
- Ed.253. Administration in Higher Education.
- Ed.254. Measurement and Evaluation in Higher Education. A consideration of the examination program in American institutions of higher learning; principles of examination instruction at the college level; the design of investigations and the critical evaluations of investigations in higher education.
- Ed.285. Professional Education of Teachers. A study of the present status of teacher education and of the problems that relate to the institutional training of teachers for public schools and higher education.
- Ed.286.* Problems in Teacher Training. Individual problems for those who have a special interest in this field. An intensive study of specific problems. Consult instructor before enrolling.
- Ed.287. Instruction and Administration in Teacher Training Institutions. Historical development; curricula; instructional organization; personnel management; administrative procedures; student teaching; trends and innovations.

Ed.288. Special Problems in Educational Sociology. The sociological foundations of educational theory. Lectures, readings, and problems.

AGRICULTURAL EDUCATION

COURSES FOR UNDERGRADUATE STUDENTS

- Agr.Ed.51. Educational Psychology. The main facts and principles of educational psychology and the fundamental principles upon which education is based. Emphasis is placed on those phases which are most closely related to vocational education.
- Agr.Ed.52. Vocational Education. A short history of vocational education; present status in Europe and the United States; industrial arts and home arts in an educational system; place of agriculture in the public schools with special reference to Minnesota.
- Agr.Ed.54. Rural Education and Community Leadership. The rural school as a community center, and ways and means of organizing educational and recreational activities, such as clubs, festivals, fairs, and other desirable features of rural community life.
- Agr.Ed.56. Rural Youth Leadership. A lecture, demonstration, and laboratory course in co-operation with leaders and specialists in the various fields and problems of rural youth leadership with emphasis on 4-H clubs, Future Farmers of America, and extension activities.
- Agr.Ed.80. Extension Work. Federal, state, and local extension aims, organization. Assembling and use of extension data and equipment. Development of extension methods especially as applied to the work of Minnesota.
- Agr.Ed.81. Teaching Agriculture. Introduction to the set-up for teaching agriculture in the high school. Observation of class work, apprentice teaching, curriculum organization, farm practice, and use of the farm and community for teaching purposes.
- Agr.Ed.82. Teaching Agriculture. Special methods course dealing with conducting a high school agriculture department. Fundamentals of method in teaching as related to teaching agriculture in the high school. Organizing subject-matter. Selection and manipulation of devices.
- Agr.Ed.83. Teaching Agriculture. Organization and administration of agriculture in secondary schools including all-day, part-time, and evening school instruction. Special emphasis on equipment, text and reference books, extension work, and organizations.
- Agr.Ed.91.‡§ Supervised Teaching Experience. Preparation of lesson plans and actual teaching of classes under careful supervision in recitation and laboratory; criticism and discussion of plans, methods, and results of student teaching. Review and discussion of assigned professional readings.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- Agr.Ed.121. Enterprise Analysis. Experience in analyzing enterprises in agriculture as a basis for identifying problems and distributing them in the horizontal set-up for the course of study in agriculture.

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

§ Passing the qualifying examination is prerequisite to this course.

- Agr.Ed.135. The Curriculum in Vocational Agriculture. A study of curriculum organization, determination of subject-matter, organization of subject-matter, job analysis, course construction, instruction on individual basis, texts, and references.
- Agr.Ed.141. Supervised Practice in Vocational Agriculture. A special methods course dealing with the selection, planning, supervising, and summarizing of the practical work in agriculture. Special emphasis on the problem method of teaching, and the use of the farm and community for teaching purposes.
- Agr.Ed.145. The Integrated Course of Study in Agriculture. A presentation of the problems of organization, administration, and teaching in departments of agriculture in the secondary schools. Special emphasis on planning programs for individual students.
- Agr.Ed.161. Vocational Education in Agriculture. A study of the principles developed and established in agricultural education. The principles developed in other vocational education fields and their relation to agricultural education.
- Agr.Ed.171. Problems in Procedure. For agriculture teachers. Emphasizes working out problems in detail in order that the processes as formulated can be used in teaching the following year by those enrolled. Discussions, readings, papers, laboratory.
- Agr.Ed.184. Special Methods in Teaching Agriculture. Designed especially for teachers in service. Emphasis on advanced problems in directing the learning activities of all-day, part-time, and evening school students.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- Agr.Ed.232.* Research in Agricultural Education. Introduction to investigational work in problems of teaching agriculture in high schools. Experience in selecting problems, preparation of bibliographies, analyzing and interpreting data, and preparing manuscripts.
- Agr.Ed.286. Special Problems in Agricultural Education. Analysis and discussion of special problems of individual teachers. Opportunity for intensive study of specific problems related to local school programs.
- Agr.Ed.291-292-293. Seminar in Agricultural Education. Critical studies of important problems in agricultural education; opportunity for individual investigation and research; review and interpretation of current educational literature.

ART EDUCATION

GROUP A—DESIGN

JUNIOR COLLEGE COURSES

- ArtEd.1-2-3. Fundamental Experiences in Design. Simple problems in construction with relation to the home, school, commerce, and industry; emphasis on relationships of line, texture, area; the nature, qualities, and uses of various media; experience in the integration of art elements.
- ArtEd.1T-2T-3T. Fundamental Experiences in Art. For those expecting to teach little children at preschool, kindergarten, and elementary school

- levels. At least two meetings a week are group activities. Other hours are arranged in consultation with the instructor to meet individual needs and to capitalize individual resources in design, drawing, and handicraft.
- ArtEd.14-15-16. Introduction to Art. Lectures, discussions, field trips, and readings aimed to develop a broad interpretation of art as an aspect of all activities in which human beings engage, and related to the ordinary experiences of life.
- ArtEd. 14A-15A-16A. Introduction to Art; Laboratory. Experiences in problem solving in art built out of the needs of contemporary society as developed in ArtEd. 14-15-16.
- ArtEd. 20-21-22. Fundamental Experiences in Design—Continued. Design with especial emphasis upon light and color. Discussion of color theories; manipulative experiences planned to develop sensitiveness to the possibilities of color in costume, home environment, and handicrafts.
- ArtEd.50,51. Commercial and Industrial Design.

SENIOR COLLEGE COURSES

- ArtEd.52A-B (formerly Art Y). Art Problems of the Home. A study of the art problems of the contemporary home. All aspects of the house unit—the plan, the interior, the exterior, and the garden—are considered as integral parts of one unit. Lectures, laboratory activities, readings, and visits to places of interest.
- ArtEd.54-55-56. Fundamental Experiences in Art. Primarily for nonmajors. Manipulative experience related to fundamental design problems at the level of maturity demanded in meeting school and community needs.
- ArtEd.70-71-72. Fundamental Experiences in Design—Continued—Color Emphasis. Manipulation of material on the level of 20-21-22 but demanding more knowledge and maturity in order (1) to relate these experiences to industry and the stage, or (2) to use them in community service for recreative and therapeutic values.
- ArtEd.150E.§ Commercial Design. A study of the function of art in printing, advertising, and publicity. Lectures, discussions, and problem solving.
- ArtEd.151E.§ Industrial Design. A study of the relationship of function, materials, and appropriate machine and tool processes to the designing or redesigning of products for quantity production. Lectures, discussions, and problem solving.
- ArtEd.152E.§ Landscape Design.
See also ArtEd. 153-154-155E, page 84.

GROUP B—HANDICRAFTS

JUNIOR COLLEGE COURSES

Courses in the Junior College are offered primarily to demonstrate to prospective social workers, elementary school teachers, and other nonmajors the recreational and therapeutic possibilities in handicrafts. They include

§ Courses designated with a capital "E" carry credit in the College of Education only.

lectures with demonstrations and some manipulation to discover the qualities and limitations of materials. Suggestions as to design appropriate to these materials will guide selection in purchasing the products of industry. Study of these products thus becomes part of the courses.

ArtEd.32. Paper.

ArtEd.32A. Cardboard and Paper Problems—school and camp emphasis.

ArtEd.33. Bookbinding—basis of a leisure hobby.

ArtEd.35. Clay.

ArtEd.37. Basketry and the Possibilities of Reed and Raffia.

ArtEd.38,39,40.‡ Textile Fibers and Weaving Processes.

ArtEd.41,42,‡43. Ceramic Processes.

ArtEd.44. Processes of Printing Textiles.

ArtEd.45. Processes of Enriching Textiles with the Needle.

For courses in wood work see Industrial Education.

SENIOR COLLEGE COURSES

Art education majors are expected to be able to design in terms of materials. Projects involving three dimensional construction will form part of ArtEd. 1-2-3 and ArtEd. 20-21-22. At the senior level this experience should be supplemented by more intensive work.

ArtEd.73‡,74‡,75.‡ Ceramic Materials and Processes. Give opportunities for thoro study of ceramics.

73. Hand building processes, simple glazing, and incised line decoration.

74. Handbuilding continued, working on the wheel; engobes and underglazing.

75. Continuing hand building and work on the wheel; elementary casting and pouring; engobes, underglazes, and glazes continued; overglazes and inlays.

ArtEd.76‡,77‡,78.‡ Textile Materials and Processes. Give opportunity for thoro study of textiles, including manipulative experience with textile processes of weaving and printing. Emphasis may be placed (1) upon seeing the relation to modern textile production-processes in industry or (2) upon skills to be applied in recreative or educational activities in the home, school, and community.

GROUP C—DRAWING AND PAINTING

JUNIOR COLLEGE COURSES

Courses in which contact with the external world is controlled to arouse sensitiveness to, and understanding of, mass, volume, force, rhythm, and processes of interaction, and exemplified in figure-poses, landscapes, and still-life; translation into terms of the picture plane by use of the various plastic means.

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

- ArtEd.4-6-8. Drawing from Still Life, Pose, and Landscape.
 ArtEd.10-11-12. Experiences with Rhythm and Color.
 ArtEd.23. Composition Clinic. Drawing for facility in expressing design.
 ArtEd.24-26-28. Drawing from Still Life, Pose, and Landscape. Continuation of 4-6-8 with handling of more difficult mediums; methods of drawing for graphic processes.
 ArtEd.29-30. Rhythmic Sketch. An elementary course planned to overcome fear in figure drawing. Blackboard drawing of use in teaching.

SENIOR COLLEGE COURSES

- ArtEd.61,62,63. Drawing and Painting—Advanced. Experience in the art of painting from the human head and figure and from objects, in various mediums, and in relation to architectural, industrial, and dramatic demands.
 ArtEd.66,67,68. Painting—Advanced. A continuation of 61,62,63.
 ArtEd.124E-126E-128E.§ Advanced Drawing and Painting. Study of the plastic means at the disposal of the painter. Experiment with various mediums. Compositional organization stressed. Creative projects completed.

GROUP D—APPRECIATION

- ArtEd.14-15-16. See under Group A page 82.
 ArtEd.52A-B. See under Group A page 82.
 ArtEd.57-58. Art and Leisure. Participation in the cultural advantages of Twin City galleries and auditoriums, particularly our University Art Gallery. Tours and tutorial conferences arranged.

Contact with excellence, study of achievement in the arts, is an integral part of all courses. Tours to stores and galleries are arranged.

For History of Art see offerings under Fine Arts and Home Economics.

- ArtEd.153-154-155E.§ Art in Society. An advanced course in appreciation designed to develop student awareness of the relations that have existed between the artist and his product, and the society which produced both. The home, costume, painting, sculpture, architecture, ceramics, approached as evidences of the psychological temper of various times, with art as the objective record of man's consciousness.
 ArtEd.153. The Home.
 ArtEd.154. Costume.
 ArtEd.155E. Painting, Sculpture, Architecture, Ceramics.

GROUP E—PROFESSIONAL COURSES

- Ed.T.80‡-81‡-82.‡ Special Methods in Art Education. A special methods course with definite reference to the problems of student teaching in the Minneapolis public schools. To be carried coincidentally with the teaching.

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

§ Courses designated with a capital "E" carry credit in the College of Education only.

- Ed.T.86-87-88.‡§ Student Teaching in Art. Actual experience under public school conditions. Informal discussions and conferences.
- ArtEd.183E.¶ Problems in Art Education. The developing by each individual of an art philosophy integrated in a wider philosophy of life. A course in which teaching experience and professional education courses are synthesized in the light furnished by study of the dynamic characteristics of life and art today.
- ArtEd.185E.¶ Types of Art Instruction. Current practices in art teaching studied and evaluated as they relate to various types of art activity and attainment of objectives. Special emphasis placed upon creative development of classroom projects and devising of suitable methods to attain objectives.
- ArtEd.189. Application of Esthetic Theories in Public Education. A scrutiny of the claims for art made in the varying esthetic theories; the validity of the claims tested in everyday living and applied to education.
- ArtEd.284E.¶ Recent Literature and Research. A study of scientific research in art education. Emphasis will be placed on future projects as well as on work already done.
- ArtEd.290E-291E-292E.¶ Special Problems in Art Education. Nine to fifteen hours' credit. The content of the courses is determined by the individual specialization and the creative projects selected. (Registration by special permission of the major adviser.)

CHILD WELFARE

COURSES FOR UNDERGRADUATE STUDENTS

- C.W.10. Introduction to Child Study. Introduction to general survey of modern movement for child study, including the child development, nursery school, parent education, and mental hygiene approaches.
- C.W.40. Child Training. A study of the physical and mental development of the child followed by a discussion of the problems of training of young children. Observations in the Nursery School, lectures, and reports.
- C.W.80. Child Psychology. A survey of child development with special reference to nursery school and kindergarten education.
- C.W.82. Later Childhood and Adolescence. Growth, social adjustment, emotional, mental, and personality development. Training and guidance in leisure time activities.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- C.W.130. Motor, Linguistic, and Intellectual Development of the Child. Lectures, readings, and reports.
- C.W.131. Personality, Emotional and Social Development of the Child. Lectures, readings, and reports.

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

§ Passing the qualifying examination is prerequisite to the course.

¶ Courses designated with a capital "E" carry credit in the College of Education only.

- C.W.133-134. Measurement of Child Personality. Developmental records, mental tests, ratings, controlled observations, etc., used in the study of children. Practical exercises and problems on institute records and data.
- C.W.140. Behavior Problems. Nature and origin of behavior difficulties. Emphasis upon young children and the relation between early behavior trends and later maladjustment.
- C.W.141-142. Practicum in Behavior Problems. Clinic and field work in the study and treatment of behavior problems.
- C.W.170. Parent Education. History and survey of programs, materials, and methods. Administration and organization. Lectures, discussions, and reports.
- C.W.190. Principles of Mental Measurement of Young Children. Mental test methods and their interpretation. Lectures, demonstrations, readings, and reports.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- C.W.230-231-232. Seminar in Recent Literature. Reviews of current literature, discussion of fundamental problems, and reports on research. Meetings in alternate weeks.
- C.W.233-234-235. Research in Child Development.
- C.W.236-237-238.* Seminar in Human Development. Fall, prenatal and infant development; winter, early and middle childhood; spring, adolescence. Surveys and discussion of research findings.
- C.W.250-251-252. Seminar in Nursery Education. Discussion of historical background and current practices, fundamental problems and theory, problems of administration and organization and of materials and techniques.
- C.W.260. Seminar in Physical Growth. Survey of the growth of the human body and its systems from early fetal life to maturity. Same as Anatomy 160. Credit cannot be received for both Anatomy 160 and C.W. 260.
- C.W.261-262-263. Statistical and Laboratory Work on Physical Growth. Same as Anatomy 161-162-163. Credit cannot be received for both.
- C.W.270-271-272.* Readings in Child Development. Independent readings and reports in any field such as physical growth, health problems, mental development, social behavior, nursery school theory, parent education, etc., which meets the approval of the listed instructors.
- C.W.273. Technique of Parent Education. Methods of teaching adults. Organization and administration of study groups. Demonstration lessons and observations.
- C.W.274. Field Work in Parent Education. Lesson plans, observations, and field work.
- C.W.275.* Seminar in Parent-Child Relations. Surveys and discussion of research findings.
- C.W.290-291. Mental Examination of Preschool Children. A study of the methods used in testing young children together with practice.

CURRICULUM AND INSTRUCTION

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- Ed.C.I.63. Children's Literature. A study of the varied purposes of reading in the elementary school. Bases of selecting materials for extensive reading. Analysis of studies of children's interests. Extensive critical survey of old and new materials for children's reading.
- Ed.C.I.113. High School Curriculum. A study of principles and of methods for the selection and organization of subject-matter for courses; the organization of curricula; contemporary viewpoints and curriculum issues; reorganization trends; typical research findings by subjects.
- Ed.C.I.118. Problems in Junior High School English.
- Ed.C.I.119. Elementary School Curriculum. A study of the principles underlying the selection and organization of subject-matter for courses in the elementary school and a survey of the methods, problems, and findings of research by subjects.
- Ed.C.I.119T-120T. Elementary School Curriculum. (Same as above, for teachers.)
- Ed.C.I.121. Educational Advising of Women and Girls. A course designed to acquaint students with the problems of educational advising of girls and young women, particularly those of high school age. Open to seniors and graduates.
- Ed.C.I.122. Literature for Adolescents. Background for pupil guidance in extensive reading in junior and senior high schools; analysis of studies of adolescent choices in literature; principles of selection; critical reading in broad field of literary, biographical, historical, scientific, and vocational interests of boys and girls.
- Ed.C.I.130. Problems of Childhood Education. Lectures, discussions, readings upon current kindergarten and primary methods, the needs of five-, six-, and seven-year-old children and the philosophy of primary instruction.
- Ed.C.I.135. Teaching of Occupations. Discussion of the content of the secondary school course in occupations, stressing sources of material and vocational trends.
- Ed.C.I.143.‡ Teaching of Reading in the Elementary School. A study of the objectives, the materials, and the teaching procedures in lower and intermediate grades in the light of the contributions of research; survey of current practices and curricula; class and individual projects; observation of reading techniques and materials in the demonstration school.
- Ed.C.I.144.‡ Teaching of Reading in the Upper Grades and Junior and Senior High Schools. A study of the teaching procedures, objectives, and materials, with special consideration for the teaching of reading in the various subject-matter fields.
- Ed.C.I.145. Remedial Reading. A study of the remedial practices in reading that are useful to both the classroom teacher and the reading specialist in the light of contributions of research, projects, and observations of remedial techniques.

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

- Ed.C.I.148. Teaching of Primary Arithmetic. Functions of arithmetic; curriculum studies; preparation of informational units; tests of arithmetic readiness; organization of materials; teaching methods.
- Ed.C.I.149. Teaching of Intermediate Grade Arithmetic. Function of arithmetic instruction; curriculum studies; development of socialized units; measurement and diagnosis; experimental research on methods of arithmetic instruction; literature on arithmetic.
- Ed.C.I.150.‡ Supervision and Improvement of Instruction. An analysis of the functions and duties of a supervisor as related to the improvement of instruction; specific supervisory technique; objective analysis of classroom activity; concrete applications to present-day problems; case studies.
- Ed.C.I.151.‡ Diagnostic and Remedial Instruction. Objective evaluation of the results of teaching; diagnosis of pupil difficulty; remedial work; tests as aids to teaching; following up a testing program.
- Ed.C.I.152. Supervision: The Adjustment of Schools to Individual Differences. The adaptation of the school, the curriculum, and classroom procedures to the abilities and interests of pupils.
- Ed.C.I.153. Supervision and Teaching of English in the Elementary Schools. Improvement of instruction in language, grammar, spelling, and handwriting; the results of scientific investigation; use of standardized and informal tests; remedial work.
- Ed.C.I.154. Supervision and Teaching of the Social Studies. The scientific work being done on the course of study in geography, history, science, and related fields; improvement of instruction in social studies.
- Ed.C.I.155. Supervision and Teaching of Arithmetic. Locating supervisory needs; enrichment of instruction; selection, organization, gradation of the curriculum; diagnostic and remedial teaching; recent trends and research.
- Ed.C.I.156.§‡ Practice Supervision—Group Problems and Field Work. Instructional and supervisory problems studied with the help of direct classroom visitation in university demonstration schools and schools in the Twin Cities, followed by conferences with teachers and supplemented with research in the literature.
- Ed.C.I.157.§‡ Practice in Supervision. Individual research on special supervisory problems; especially intended for supervisors in service.
- Ed.C.I.159. Supervision and Teaching of Reading. The improvement of instruction and supervision of reading by teachers, principals, and supervisors.
- Ed.C.I.160.‡ Supervision of Elementary Subjects. An overview course for giving supervisor and superintendent information as to recent trends in elementary education.
- Ed.C.I.162. Significance of Progressive Education. A survey of the progressive education movement and its effects on curriculum, methods, organization, and supervision.

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

§ Passing the qualifying examination is prerequisite to this course.

- Ed.C.I.168. Current Developments in the Social Studies. A survey of contemporary literature, curricular trends, the commission report, and recent development of integration.
- Ed.C.I.169. Extra-curricular Activities.
- Ed.C.I.172. Curriculum and Course of Study Construction. A practicum course. A study of, and practice in, the techniques employed at elementary, secondary, and higher education levels. Class projects and individual projects according to needs, interests, level, and specialization. Thorough exploration of one field by each student.
- Ed.C.I.173. Recent Research and Literature in Reading. A survey of recent problems, issues, studies, and findings. Intended for those who have had previous training in reading, who have a special problem or who wish to survey the most recent literature.
- Ed.C.I.174†§-175†§-176.†§ Clinical Methods and Practice in Speech Pathology.
- Ed.C.I.181.† Foundations of Elementary School Methods. A survey of the current philosophy and research which form the bases for improvement of elementary school instruction. Observation in the demonstration school.
- Ed.C.I.181T-182T.† Foundations of Elementary School Methods. For teachers in service.
- Ed.C.I.184. Supervision of Student Teaching. Primarily for teachers engaged in the direction of practice teachers in secondary education.
- Ed.C.I.188.‡ Advanced Course in Methods of Teaching Modern Languages. An advanced course of the seminar type in methods of teaching modern foreign languages. Designed primarily for experienced teachers and graduate students. Lectures, readings, discussion.
- Ed.C.I.191.† Advanced Course in the Teaching and Supervision of Secondary School Mathematics. Evaluation of the present practices in methods, content, and administration of junior and senior high school mathematics.
- Ed.C.I.198. Recent Literature in Methods and Curriculum in English.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- Ed.C.I.201-202-203.*†† Problems in Teaching the Social Studies.
- Ed.C.I.222-223-224. Seminar in the Technique of High School Instruction. No credit. Required of students working on theses.
- Ed.C.I.225.* Special Problems in Supervision of Instruction in Secondary Schools. Study of special problems in supervision primarily for graduate students and supervisors in schools who are qualified to make intensive studies. Consult instructor before registering.
- Ed.C.I.261.* Special Problems in School Supervision. Intended primarily for graduate students majoring in supervision and others qualified to make intensive studies of specific problems related to school supervision. Fall, surveys of instruction; winter, construction of tests for measuring the extent to which objectives are achieved; spring, problems in the evaluation of teaching.

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

‡ Passing the qualifying examination is prerequisite to this course.

- Ed.C.I.263.* Recent Research in Arithmetic Instruction. A study of recent research in curriculum, gradation of subject-matter, methods, materials, and supervision of arithmetic.
- Ed.C.I.264.* Recent Research in Educational Diagnosis. A study of recent research in the methods of diagnosis in education, and the techniques of preventive and remedial teaching.
- Ed.C.I.265.* Recent Literature in Supervision. A study of recent research on problems of elementary school supervision.
- Ed.C.I.266. Supervision of High School Instruction. The present status of high school supervision; its proper scope and function. A course combining consideration of principles and their application to improving high school instruction in the academic and special subjects. (See also Ed.Ad. 264-265.)
- Ed.C.I.271.* Problems in Curriculum. Individual or group study for those who have a special interest in a problem in this field.
- Ed.C.I.287.‡ Advanced Course in the Teaching of Science. A study of recent developments in the teaching of science and a critical evaluation of the investigations dealing with science teaching.
- Ed.C.I.293.* Foundations of Secondary School Methods. A study of the investigations which form the bases of the technique of high school instruction and the application of their results to subject-matter and to classroom procedure. Each member will work primarily in the field of his teaching choice, with a final synthesis by the class as a whole.
- Ed.C.I.294.*‡ Advanced Course in Methods of Teaching English. Evaluation of present practices in methods and content of junior and senior high school English courses in the light of the known results of scientific investigations in that field.
- Ed.C.I.296-297.* Special Problems in Techniques of Secondary School Instruction. Special research problems in the field of the student's individual choice.

EDUCATIONAL ADMINISTRATION

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- 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.
- Ed.Ad.124. Public School Administration. The organization, administration, and general support of public schools in states and local school districts.
- Ed.Ad.125. Techniques in Administration. Standard practices regarding child accounting problems, records and reports; procedures having to do with personnel and school board relations and rules and regulations; standard office practices, including textbook and supply management.
- Ed.Ad.126. School Plant Management. Plant program planning and financing, including operation and maintenance of public school buildings.
- Ed.Ad.180.‡ Practice in High School Administration. Practical experience

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

in problems of administration, pupil personnel, curriculum administration, extra-curricular activities, staff problems, program and schedule making, etc. Consult instructor before registering.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- Ed.Ad.210.* Financial Aspects of Public School Business Administration. Financial program planning, budgeting, accounting, cost finding, income and expenditure control; and the preparation and analysis of financial reports.
- Ed.Ad.218-219-220. Seminar in Secondary School Problems.
- Ed.Ad.228.* Special Problems in Educational Administration. This course is designed primarily for superintendents and principals qualified to make intensive studies of specific problems related to the administration of a school system.
- Ed.Ad.230-231.* Public Relations for Schools. First quarter: Theory and practice of educational interpretation. Principles involved; machinery and personnel; the teacher's contacts with the community; the role of the pupil; professional and lay organization. Second quarter: Techniques and mediums of educational interpretation. Layout; news and feature writing; radio broadcasting; bulletins and reports; exhibits; special occasions.
- Ed.Ad.235-236-237. Seminar in Educational Administration. Enrolment limited to candidates for Master's degrees under Plan A and candidates for Ph.D. degrees in educational administration.
- Ed.Ad.264-265. High School Administration. Organization of secondary school units; housing; selection and assigning of the staff; schedule making; public relations and publicity; organization of guidance and of extra-curricular activities; pupil, equipment. and internal fund accounting and related problems of administration; government; problems related to instruction. For continuation of this course see Ed.C.I.266.
- Ed.Ad.270.* Special Problems in Secondary Education. Primarily for those at work in high schools who are qualified to make intensive studies. Consult instructor before registering.
- Ed.Ad.278.* School Surveys. A study of the literature and method of school surveys, as a basis for the investigation of practical problems in school administration and supervision.

EDUCATIONAL PSYCHOLOGY

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- Ed.Psy.60. Introduction to Statistical Methods. This course includes a study of measures of central tendency, variability, and correlation.
- Ed.Psy.113-114-115. Psychology of Elementary School Subjects. A discussion of the research studies in the field of the psychology of elementary school subjects.
- Ed.Psy.116-117. Statistical Methods in Education. A course designed to lay the foundations of statistical theory and to develop the craftsmanship to

- put theory to application with special reference to educational and psychological problems. Primarily for graduate students.
- Ed.Psy.120. Basic Principles of Measurement. Principles applied to the construction and use of tests and to the interpretation and evaluation of scores. Illustrations from mental and other aptitude tests, education, personality, and character tests.
- Ed.Psy.138-139. Experimental Educational Psychology. A laboratory course designed to train students in the use of experimental methods in the study of educational problems, particularly in the field of the psychology of learning. It is suggested that this course supplement either 133 or 190, 191, 192 or 193-194.
- Ed.Psy.140. Construction and Use of Educational Tests and Examinations. A study of tests for elementary and secondary school pupils and for graduate students. Each student will have opportunity to construct examinations and to evaluate published tests in the field of his major interest.
- Ed.Psy.141. Construction and Use of Group Aptitude Tests. A study of group aptitude tests for all school levels with special emphasis on reliability and validity as instruments for educational and vocational guidance.
- Ed.Psy.142. Construction and Use of Individual Aptitude Tests. Application of basic principles of measurement to individual diagnosis. Demonstration and practice. Stanford-Binet, Kuhlman-Binet, and performance tests. Consideration of other clinical methods.
- Ed.Psy.146-147. Child Guidance. The understanding and treatment of all forms of behavior problems in children of school age. Didactic lectures, reading, and presentation of clinical case records.
- Ed.Psy.149-150-151. Psycho-educational Clinic. Conducted in co-operation with existing clinics and agencies in the Twin Cities. Students will receive practice in giving psychological examinations, in case study, and in scientific interpretation of data.
- Ed.Psy.157. Psychology of Child Development. The physical, mental, social, and emotional development of children from birth to adolescence.
- Ed.Psy.158. Psychology of Adolescence. A study of changes characterizing the transition from childhood to adult life. Implications for guidance during the period of secondary education.
- Ed.Psy.159. Personality Adjustments in Education. A survey course for educational workers with emphasis upon the causal backgrounds of childhood and adolescent personality characteristics and upon the environmental conditions providing for the best mental health. Attention will be given to personality measurements, to a discussion of the advantages and dangers of teachers engaging in mental hygiene practices.
- Ed.Psy.180. Esthetics in Education. An objective approach to the existence, causes, and methods of dealing with individual differences in esthetic abilities.
- Ed.Psy.183. Psychology of Gifted Children. A study of the abilities and characteristics of intellectually gifted children and adults.

- Ed.Psy.184. Mental Deficiency. Survey of physical and mental traits of intellectually subnormal children and adults; social problems of feeble-mindedness.
- Ed.Psy.189. The Human Organism. The development of the human organism in relation to educational practice.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- Ed.Psy.201-202-203. Seminar in Educational Psychology. A research course for graduate students. Required of all students writing theses in educational psychology. Does not carry credit as course work.
- Ed.Psy.216-217-218. Statistical Methods in Education. A course at the graduate level designed to lay the foundations of statistical theory and to develop the craftsmanship to put theory to application with special reference to educational and psychological problems.
- Ed.Psy.225.* Diagnosis and Counseling in Guidance. An advanced course for students with a background in both guidance principles and measurement techniques and who expect to enter the field of counseling and guidance as a profession in education.
- Ed.Psy.240.* Problems in Measurement. Intensive study and individual research in problems of educational and vocational measurement.
- Ed.Psy.253-254-255.* Research Problems.
- Ed.Psy.281. Practice in Personnel Work. Designed to give properly qualified students experience in the use of psychological and related methods in dealing with individuals.
- Ed.Psy.290. Original Nature of Man. Advanced work in genetic psychology, man's unlearned behavior, and inherited capacities.
- Ed.Psy.291. Individual Differences. A study of group and individual differences and their relations to educational practice.
- Ed.Psy.292.* Recent Literature in Educational Psychology. Readings and reports on problems in educational psychology.
- Ed.Psy.293-294.* Psychology of Learning. A survey of the points of view on learning of the several schools of psychology and a study of the experimental literature in human learning.
- Ed.Psy.297-298-299. Problems in Subnormality. Phases of subnormality studied intensively. Review of important literature and original investigation. Student required to make report on assigned topics and submit a paper on some problem at the close of the quarter.

HOME ECONOMICS EDUCATION

COURSES FOR UNDERGRADUATE STUDENTS

- H.E.Ed.90. Child Training. A brief study of the physical and mental development of the child is followed by a discussion of the problems of training small children. Emphasis is placed on the preschool child. Lectures, observations in the Nursery School, and reports.

- H.E.Ed.91.†§ Observation, Material, Teaching in Home Economics. The psychological bases for teaching; investigation and collection of facts on teaching situations through observation and participation in school activities; study of teaching materials and method.
- H.E.Ed.92. Teaching Problems in Home Economics. Reports, discussion, conferences on the planning of units, teaching procedures, illustrative materials, and equipment.
- H.E.Ed.93.*†§ Supervised Teaching in Home Economics. Observation, participation, and actual teaching experience under supervision in different home economics situations and on different age levels. The student must have received a grade of C or higher in H.E. 1, 3, 4, 20, 21, 22, 31, 34 (or 170), 40, 41, 55, and must have completed Home Experience in Meal Preparation and Clothing, and must have passed the qualifying examination.
- H.E.Ed.94.*† Supervised Teaching in Home Economics. A continuation of H.E.Ed. 93. To receive credit for this course students must have completed H.E.Ed. 93.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- H.E.Ed.192. Educational Measurement in Home Economics. Study of the techniques of measurement applicable in home economics; construction and evaluation of objective devices; review of published tests and scales.
- H.E.Ed.193. Home Economics Curriculum. The objectives of home economics at various educational levels; evaluation of present curriculum practices; techniques employed in curriculum planning and reconstruction.
- H.E.Ed.194a. Adult Education Problems. Development of unit outlines in the various fields of home economics. Discussion of teaching methods. This course is planned for high school and extension teachers and supervisors of home economics classes.
- H.E.Ed.194b. Adult Education Problems. Development of unit outlines, illustrative material, and bibliography for use in adult classes. This course is planned for teachers and supervisors of local leader groups or adult classes.
- H.E.Ed.197. Organization and Methods for Related Art Teaching. Organization of a related art course and methods of teaching art as applied to familiar objects and processes.
- H.E.Ed.199. Methods of Investigation and Research. Study of methods used in collecting data on various types of educational problems; tabulation; organization; appropriate statistical treatment of data; writing reports of investigations made.

COURSES FOR GRADUATE STUDENTS ONLY

- H.E.Ed.243. Trends in Home Economics Education. The place of home economics in the educational program today; the ways in which content and procedures are being modified to meet changing conditions.

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

§ Passing the qualifying examination is prerequisite to registration in this course.

- H.E.Ed.292.* Educational Measurement Problems. A continuation of Courses 192, with emphasis upon individual problems in the field of measurement.
- H.E.Ed.294.* Investigations and Research in Home Economics Education. Provides opportunity for advanced students to do independent study in which readings and reports are required. Problems may be selected which involve collection, treatment, and interpretation of data.
- H.E.Ed.295.* Current Problems in Home Economics Education. Discussion and reports on present-day problems in the field of home economics education.

INDUSTRIAL EDUCATION

Shop and drawing courses.—Courses of a manipulative or laboratory nature are offered at the University in great number and variety. (See bulletins and schedules on Architecture and Fine Arts, Drawing and Descriptive Geometry, Mechanical Engineering, and Agricultural Engineering.) Students may arrange to take shop, drawing, and related courses, day or evening, at the William Hood Dunwoody Industrial Institute without fees other than those paid to the University, except \$1 which is subject to refund.

All shop and drawing courses should be selected under advice and may be either extensive or intensive in resultant preparation for teaching. Twenty credits in shopwork and ten credits in drawing are required. It is recommended that the twenty required credits in shopwork be distributed with reference to woodworking, metal working, electricity, and printing in equal amounts. Fifteen additional credits in either drawing or shopwork, or in both fields combined, may be elected. A maximum of forty-five credits is strictly enforced, which fact should be noted, particularly by those who transfer to this University or to this special curriculum with advanced standing. Credits in excess of forty-five will be recorded but they will not be counted toward the graduation requirement.

COURSES FOR UNDERGRADUATE STUDENTS

- Ind.11.‡ Special Class Woodwork. For teachers of art, subnormal and primary work; lectures, demonstrations, and shop practice; not open to those with college credit in woodworking. Not a part of the special four-year curriculum.
- Ind.30. Graphic Presentation. Typical methods of the graphic portrayal of data; use of educational and social facts for drill in construction and interpretation; corrected charts become student property.
- Ind.40. Analysis. Necessity for, and types of, occupational analysis; individual work upon selected trade fields, for course construction purposes.
- Ind.42. Course Organization. Makes definite use of analyses; content of courses selected and arranged for common and special teaching situations; both general and vocational classes and groups considered.
- Ind.44. Equipment and Management. Sources, purchases, costs, and inventories; installation, upkeep, and safe operation; storage and issue of

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

- tools and supplies; financial accounts, bills of material, and disposal of products.
- Ind.50A-B-C.‡ Directed Teaching. Three quarters or six credits required. (Consult with adviser or critic teacher.)
- Ind.60. Philosophy of Vocational Education. Development and characteristics of vocational training; conservation of human and material resources; social and economic significance; results and weaknesses; current theories.
- Ind.61. Practices in Vocational Education. Plans of organization and control; types of schools and classes; public versus private and corporation training; state and federal aid; teacher preparation; efficiency factors.
- Ind.65.‡ The Non-vocational Subjects. Materials in civics, industrial history, commercial geography, English, and other branches classified by the Smith-Hughes Law, as "non-vocational"; the needs of groups, course planning, and special devices. Not a part of the special four-year curriculum.
- Ind.66.‡ Related Subjects. Theories, practices, and problems of related instruction; special reference to mathematics, drawing, science, safety, and other auxiliary and technical information; group study, unit courses, usable techniques of management.
- Ind.70.‡ Methods in Shop Subjects. Conduct of shop classes, with and without reference to production work; plans, demonstrations, drill, grading, reports, and records. General concepts and techniques of method particularized for school shop situations.
- Ind.75.‡ Methods in Drawing. The selection and arrangement of course materials; methods of presentation, instructional devices, and problems of the drawing room. Not a course in drawing.
- Ind.80. General Industrial Training. Administration of the industrial department for elementary and secondary schools in typical Minnesota towns and elsewhere; aims, offerings, schedules, etc.; consideration of the unifying opportunities within a department, school, or system.
- Ind.81. The General Shop. Types of general shop arrangements and facilities; function, organization, and procedure in keeping with modern practice. Not a shop course.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- Ind.101. Tests in Industrial Subjects. Acquaintance with such available tests of aptitude and achievement as are useful in industrial education; application of selective, classification, remedial, and grading techniques to the work of shop and drawing instructors. Evaluation and construction of tests in subject areas to be selected by the individuals enrolled.
- Ind.103. Instructional Aids. Preparation of individual instruction sheets, progress charts, plans of procedure, and other classroom aids. Each student is privileged to work within his own subject field and interest.

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

§ Passing the qualifying examination is prerequisite to this course.

- Ind.105. Industrial Education. An overview course for advanced students in the specialty and for principals, superintendents, and others; general and vocational phases, objectives, programs, and practices; laws, rulings, and standards for aid; significant literature; how to judge teachers, courses, and methods. Not a part of the special four-year curriculum.
- Ind.107. Co-ordination. An analysis of the province and duties of co-ordinators in trade schools, part-time programs, and cosmopolitan high schools offering training opportunities. Informational for school administrators and in the nature of guidance and training for those having interest in this new type of school work.
- Ind.108. Apprenticeship. History and recent development of apprenticeship in the United States; trends, practices, organization, laws, and rulings; state plans for vocational education in their varying relationships to apprenticeship.
- Ind.110. Guidance in the Schools. History of the educational and vocational guidance movement; typical public school means and methods; types and uses of occupational information; duties of the counselor; organization and relationships.
- Ind.115. Supervision of Industrial Education. Supervisory practices and problems in both industrial arts and trade training. Attention to small-town and large-city situations and to the activities of state supervision. Application, to the special field, of devices and techniques common in the more general subjects. Not a part of the special four-year curriculum.
- Ind.170. Day Industrial Schools. National, state, and local organization and types; buildings and equipment; promotion and advertising; co-operative relationships; teaching staff; pupil guidance, training, placement, and follow-up.
- Ind.171. Evening Industrial Schools. Development of the after training of adults; agencies and scope of the movement; national and state legislation; qualifications of instructors; problems and difficulties; records and certification; fees and charges; buildings, equipment, and instruction facilities.
- Ind.172. Part-time Education. A study of the new movement for part-time education; social and economic background; organization of classes; study of special student groups; courses of study; typical schools; comparative state legislation and plans; federal and state reimbursement.

COURSES FOR GRADUATE STUDENTS ONLY

- Ind.200.* Research Problems. Lectures and conferences paralleling the independent work of candidates for the Master's degree under Plan B, without thesis. Limited to those with full status in the Graduate School.
- Ind.250-251-252. Problems in Vocational Education. Six credits offered. Survey of printed reports; critical analysis; selection of thesis problems; formulation of work plans; reports of progress; organization and presentation. Not a part of the four-year curriculum. Limited to those with full status in the Graduate School.

LIBRARY METHODS

Statement of fees.—The fees for Library Methods are \$3 per credit or \$40 per quarter for residents of Minnesota and \$3.50 per credit or \$50 per quarter for nonresidents.

COURSES FOR UNDERGRADUATE STUDENTS

- Lib.Meth.51. Bibliography. Trade and national bibliography of the United States, Great Britain, and Europe; book ordering methods.
- Lib.Meth.52. § Cataloging. Elements of dictionary cataloging. Lecture, problems, and practice.
- Lib.Meth.53. Advanced Cataloging. Continuation of 52, with special attention to difficult books and administrative aspects of a catalog department.
- Lib.Meth.54. § Classification. Classification by the Dewey Decimal System, subject headings, author numbers, shelf and accession records.
- Lib.Meth.55. Advanced Classification. Continuation of 54. Library of Congress and other classifications; classed catalogs; special adaptations of classification.
- Lib.Meth.57. Secondary School Libraries. Administrative methods and problems of school libraries.
- Lib.Meth.58. Public Library Administration. Administration, equipment, finance, and extension work of public libraries.
- Lib.Meth.60. Library Binding. Economics of library binding. Materials, processes, records, book repair.
- Lib.Meth.61. § Library Practice. Practice, under supervision, in Minneapolis and St. Paul libraries. The time and character of the practice will be arranged individually to suit student aptitudes, usually in the second and third quarters. Required of all students as prerequisite to a degree in library training.
- Lib.Meth.62. § Reference. Reference books and other material with emphasis on methods of search and adaptation of material to needs of users.
- Lib.Meth.63. Advanced Reference. Specialized reference material, public documents, and periodicals. Reference lists and reports on special problems.
- Lib.Meth.64. Selection of Books for Adolescents. Principles of selection and criticism of representative books. Study and preparation of book lists for adolescents in school and public libraries.
- Lib.Meth.67. Library Printing. Preparation of copy, editing, proof reading, layout of library publications. Criticism of typical printed material.
- Lib.Meth.68. Circulation Work. Lending systems and records. Library publicity. Library exhibitions, etc.
- Lib.Meth.69. Current Library Problems. Discussion of typical problems and conditions in American libraries.
- Lib.Meth.70. Current Library Problems. Further discussion of typical library problems, library buildings, library surveys, etc.
- Lib.Meth.71. Library Work with Children. Administration of children's rooms and book selection.
- Lib.Meth.72. Library Work with Children. Further discussion of administration of children's rooms and book selection.

§ Required of all candidates for a degree in library methods.

- Lib.Meth.73. Selection of Books for Adults. Principles of selection and criticism of representative books. Criticism and preparation of book lists.
- Lib.Meth.74. Selection of Books for Adults. Further discussion of books and aids to book selection.
- Lib.Meth.75. Selection of Books for Adults.
- Lib.Meth.76. Library Service in Hospitals.
- Lib.Meth.77. Book Selection for Hospital Patients.
- Lib.Meth.78. Reading and the Mental Patient.
- Lib.Meth.79. Medical Reference Work.
- Lib.Meth.80. Hospital Library Practice.

COURSE PRIMARILY FOR GRADUATE STUDENTS

- Lib.Meth.126. Subject Bibliography. Senior or graduate standing and bibliographical or research training or experience are prerequisite to this course.

METHODS AND DIRECTED TEACHING

COURSES FOR UNDERGRADUATE STUDENTS

SPECIAL METHODS AND DIRECTED TEACHING
COMBINED COURSE

Arrangements for practice teaching in the academic subjects should be made through Mr. W. S. Carlson before the close of the junior year. Such arrangements should be completed before the student registers for other courses. Passing the qualifying examination is prerequisite to all special methods and directed teaching courses. Such courses are indicated in this section by an asterisk (*). See pages 12 and 23.

The teachers' courses in methods of teaching and in practice teaching are combined into a one-year course in the following subjects:

- Ed.T.50A-B-C.*‡ Special Methods and Supervised Practice in Health Teaching.
- Ed.T.60A-B-C.*‡ Special Methods and Directed Teaching in Geography. (For junior high schools.)
- Ed.T.66A-B-C.*‡ Special Methods and Directed Teaching in English.
- Ed.T.67A-B-C.*‡ Special Methods and Directed Teaching in Mathematics.
- Ed.T.68A-B-C.*‡ Special Methods Course and Directed Teaching in Secondary School Science.
- Ed.T.69A-B-C.*‡ Special Methods and Directed Teaching in the Social Studies.
- Ed.T.70-71-72.*‡ Special Methods and Directed Teaching in German.
- Ed.T.71A-B-C.*‡ Special Methods and Directed Teaching in Latin.
- Ed.T.72A-B-C.*‡ Special Methods and Directed Teaching in Romance Languages (French and Spanish).
- Ed.T.73A-B-C.*‡ Special Methods and Directed Teaching in Commercial Subjects.

* Passing the qualifying examination is prerequisite to this course.

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

DIRECTED TEACHING FOR SPECIAL STUDENTS

- Ed.T.51A.*‡ Special Methods of Teaching in Schools of Nursing. A study of the problems of nursing education, surveying present conditions. Objectives of nursing education and the making of curricula. Principles underlying clinical and classroom teaching in schools of nursing. Planning instruction.
- Ed.T.51B.*‡ Special Methods of Teaching in the School and Teaching in Schools of Nursing. Observation and study of principles of teaching applied in the nursing school situation. Supervised practice in teaching of nursing subjects.
- Ed.T.52.*‡ Directed Teaching. Teaching under supervision in the University High School and in the Twin City schools. The course calls for one period daily at the school where the work is assigned. Registration in this course is limited to students who have completed special methods courses or have had teaching experience. Practice teaching in academic subjects is normally combined with special methods courses in a one-year teachers' course.
- Ed.T.53.*‡ Directed Teaching of Subnormal Children. Students will have opportunity to observe work with the special classes, and to teach under direction. Conducted in co-operation with the public schools of Minneapolis and St. Paul.

SPECIAL METHODS COURSES IN JUNIOR-SENIOR HIGH SCHOOL
SUBJECTS

- Ed.T.50A-B-C.*‡ Special Methods and Supervised Practice in Health Teaching.
- Ed.T.60A-B-C.*‡ Special Methods and Directed Teaching in Geography.
- Ed.T.61.*‡ Teachers' Course in Norwegian.
- Ed.T.62.*‡ Teachers' Course in Swedish.
- Ed.T.66A-B-C.*‡ Special Methods and Directed Teaching in English. A one-year course. This course is required of all students with a major in English or Speech.
- Ed.T.66Am.*‡ Teaching of Composition in the Senior High School. Objectives of composition; selection of subject-matter and its relation to the problem—project method of assignment; problems of grading composition; problems of teaching grammar, punctuation, and spelling; oral composition. Practice teaching and observation are combined with this course except in special cases.
- Ed.T.66Bm.*‡ Teaching of Literature in the Senior High School. Objectives of literature teaching; differentiated method for appreciation and information; methods of handling different types such as fiction, drama, poetry, and essay; survey courses; home reading; illustrative material. Practice teaching and observation are combined with this course except in special cases.

* Passing the qualifying examination is prerequisite to this course.

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

- Ed.T.67A-B-C.*‡ Special Methods and Directed Teaching in Mathematics. A one-year course required of all students with a major in mathematics.
- Ed.T.67Am-Bm.*‡ Teaching of Secondary School Mathematics. Discussion of procedures in selecting and organizing materials and in teaching secondary school mathematics.
- Ed.T.68A-B-C.*‡ Special Methods and Directed Teaching in Secondary School Science. A one-year course required of all students with a major in natural science.
- Ed.T.68Am-Bm.*‡ Methods of Teaching Secondary School Science.
- Ed.T.69A-B-C.*‡ Special Methods and Directed Teaching in the Social Studies. A one-year course required of all students with a major in history or the social studies.
- Ed.T.69Am-Bm.*‡ Methods of Teaching the Social Studies.
- Ed.T.70A-B-C.*‡ Special Methods and Directed Teaching in German. A one-year course required of all students with a major in German.
- Ed.T.71A-B-C.*‡ Special Methods and Directed Teaching in Latin. A one-year course required of all students with a major in Latin.
- Ed.T.72A-B-C.*‡ Special Methods and Directed Teaching in Romance Languages. A one-year course required of all students with a major in French or Spanish.
- Ed.T.73A-B-C.*‡ Special Methods and Directed Teaching in Commercial Subjects. A one-year course required of all students in the specialized curriculum in commercial education.
- Ed.T.74.*‡ Teacher's Course in Journalism. A study of methods and techniques of presenting journalism instruction to students of less than college level. It is required of College of Education students with journalism minors.

METHODS AND DIRECTED TEACHING IN THE ELEMENTARY SCHOOL

- Ed.T.54A-B-C.*‡ Teaching of Elementary School Subjects. Fall—reading, social studies; winter—English, arithmetic; spring—directed teaching in selected schools.
- Ed.T.64.‡ Teaching of Geography and History in the Elementary School. The aims and purposes controlling instruction in geography and history in the elementary school; tendencies toward standardization, special emphasis on problem studies.
- Ed.T.65.*‡ Directed Teaching with Special Methods in Elementary Schools. Teaching under supervision in graded or rural schools in the vicinity of the University; discussion of special methods in their application to actual problems of teaching for teachers with experience.
- Ed.T.78A-B. Methods in the Primary Grades.
- Ed.T.81.‡ Techniques of Puppetry.

* Passing the qualifying examination is prerequisite to this course.

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

METHODS AND DIRECTED TEACHING IN THE KINDERGARTEN AND NURSERY SCHOOL

- Ed.T.55. Principles of Early Childhood Education. The development, aims, and organization of kindergarten and nursery school education. A consideration of the curriculum and methods.
- Ed.T.56. Permanent Play Materials. A consideration of the various kinds and types of permanent play materials (blocks, dolls, trains, wagons, etc.) and their use by children of different ages.
- Ed.T.57.‡ Plastic Materials. The materials used in constructive work, paper, crayons, paints, clay, woodwork, sewing, sand, etc. The student is given some opportunity for actual use of the materials and will gain considerable knowledge of the abilities of children of different ages.
- Ed.T.58. Rhythms, Games, and Music for the Young Child. A course designed to train the student in the handling of a music and rhythm period and in group games. The student will be expected to take part in the rhythms and music work in both the Nursery School and the Kindergarten.
- Ed.T.59. Story Telling for Young Children. A study of folk, fairy, here-and-now stories and poetry suitable for young children. The principles underlying story telling, the selection of the story, and versions. The educational importance of conversation with the child.
- Ed.T.75.‡ Methods and Observation in the Nursery School. Open only to home economics and nursing education students.
- Ed.T.76A-B-C.‡ Methods and Observation. Two hours each week will be spent observing in the Nursery School or in the Kindergarten. There will be written reports of the observations and a class discussion of one hour in alternate weeks.
- Ed.T.77A-B-C.*‡ Directed Teaching in Kindergarten or Nursery School.

SPECIAL METHODS IN SPECIAL SUBJECTS

For courses in the theory and practice of teaching in the special subjects see special curricula.

MUSIC EDUCATION

NOTE.—For description of courses in Music and statement of fees see Bulletin of Science, Literature, and the Arts. For statement of fees, see also Combined Class Schedule, p. 67.

- Mu.Ed.1. Music Orientation. To provide opportunity for the student to become acquainted with the various divisions of music study; a survey of the offerings in general music and music education.
- Mu.Ed.4-5-6.‡ Applied Instrumental Technique. This laboratory course is divided into three quarters, strings, brass (and percussion), and woodwinds, respectively. It incorporates the theory and technical development of the instruments, and elementary instruction in the playing of the

* Passing the qualifying examination is prerequisite to this course.

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

chosen vehicle of expression, with special attention to the routine of class instruction.

- Mu.Ed.50A.‡ Primary Methods. Practical methods for teaching music in the nursery school, kindergarten, grades one, two and three. Particular attention is given to the child voice, its care and development; rote singing; the transition from rote singing to note reading; new practices and materials. Observation in Minneapolis and St. Paul schools.
- Mu.Ed.50B.‡ Intermediate Methods. Music methods to be used in grades four, five, and six; rhythmic and melodic problems; voice testing; two- and three-part singing; integration. Observation in Minneapolis and St. Paul schools.
- Mu.Ed.52.‡ Technique of Teaching Appreciation. A practical course in the teaching of appreciation of music to children in the elementary grades. Materials and methods of presentation will be discussed and demonstrated, using the class as a laboratory.
- Mu.Ed.53.‡ High School Methods. Organization and methods of teaching chorus, glee clubs, and voice classes; appreciation and theoretical music as encountered in the modern junior and senior high school. Particular attention to the changing voice, various voice combinations, helps and materials for public appearances.
- Mu.Ed.54.‡ Operetta Production. How to select, organize, and present an operetta, pageant, cantata, etc. Costuming, make-up, lighting, rehearsals, business management, and scenery are included. All material and discussions are from the educational point of view.
- Mu.Ed.55.‡ Survey and Evaluation of Vocal Materials and Methods. An analysis and comparison of various techniques of school music teaching. A survey of octavo vocal materials and textbooks in series.
- Mu.Ed.59.‡¶ Choral Literature and Conducting. A laboratory class for intimate contact with vocal materials and actual practice in conducting. The following approaches are used: the class reads much material for contact and evaluation, the music education seniors will rehearse and direct small ensembles from the class, conducting problems will be presented and discussed from the student's as well as the teacher's point of view.
- Mu.Ed.60-61-62.‡¶§ Supervision and Teaching. Practical phases of school music teaching. Actual experience in carrying forward, under supervision, the activities of the elementary music teacher as well as all types of vocal and instrumental activities in the junior and senior high school. Work done in Minneapolis and St. Paul schools and University High School. Special attention given to organization of materials, methods of procedure, lesson planning, and recent approaches.
- Mu.Ed.63.‡ Band Conducting. A course designed to give practical experience in conducting recommended band literature of all grades.

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

§ Passing the qualifying examination is prerequisite for this course.

¶ Four credits are required in Mu.Ed. 59. The course should be repeated until all four credits are earned.

- Mu.Ed.64.‡ Band Organization. A course dealing with the organization, promotion, curriculum, administration, equipment, and other problems of the school band.
- Mu.Ed.65.‡ Instrumentation. This course involves a theoretical study of orchestral and band instruments, in combination. The physics of tone color is explained. Revision of materials suitable for school use, and discussion of capacity and capability of school performance on the various instruments are undertaken.
- Mu.Ed.68. Conducting of Instrumental Music and Survey of Materials. Training of directors of orchestra and band ensembles, and a critical survey of available music materials adaptable to public school music purposes. Laboratory practice in the technique of the baton in interpreting worthy instrumental compositions, developing a keen appreciation of better literature. Psychological basis of conducting and consideration of the acoustical properties of auditoriums. Efficient management of rehearsals.
- Mu.Ed.70. Accompanying and Sight Reading. A laboratory course aimed to develop proficiency in the art of accompanying and sight reading.
- Mu.Ed.101. Tests and Measurements in Music Education. Techniques for elementary statistics. To acquaint students with existing tests in the field of music education; their reliability, validity, administration, and proper interpretation of the findings.
- Mu.Ed.220E.§ Survey and Application of Research in Music Education. To include recent books, monographs, and studies. Relative significance of their contributions in respective fields.
- Mu.Ed.224E.§ Seminar and Individual Research Problem in Music Education. A knowledge of elementary statistics is required. Individual projects; guidance; remedial procedures; interrelationships.
- Mu.Ed.225E.§ Advanced Applied Music.

NURSING EDUCATION

COURSES FOR UNDERGRADUATE STUDENTS

- Nurs.60. Ward Administration. Principles underlying effective ward management and administration. Lectures, classes, and field visits.
- Nurs.61s. Survey of Hospital Relationships. Study of hospital personnel, departments and interrelationships.
- Nurs.63. Motion Study.
- Nurs.65. Comparative Nursing Procedures.
- Nurs.69. Survey of Conditions and Trends in Nursing. Study of conditions existing in nursing as revealed in literature and various reports. An attempt to define tendencies in nursing with a view to designating those which appear most favorable to social progress.
- Nurs.71. Curriculum Making in Schools of Nursing. General principles of curriculum making; study of the functions of the graduate nurse in the community as determinants of the clinical and classroom curricula of the

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

§ Courses designated with a capital "E" carry credit in the College of Education only.

professional school. Integration of materials into curricula preparing nurses as community health agents.

Nurs.72. Teaching and Supervision in Schools of Nursing.

For descriptions of other courses, see pages 111-113.

For courses for graduate students see Bulletin of the Graduate School.

PHYSICAL EDUCATION FOR MEN

For statement of fees see Combined Class Schedule.

Phys.Ed.1,2,3. Sports Education—General course required of all men in College of Education.

Phys.Ed.4A. Basketball Fundamentals. Demonstrations and practice in such fundamentals as footwork, passing, dribbling, goal throwing, individual and team defensive tactics.

Phys.Ed.4B. Football Fundamentals. Demonstrations and practice in football fundamentals for all positions of a football team.

Phys.Ed.4C. Track Fundamentals. Demonstration and practice in all track and field events.

Phys.Ed.5A-B-C (formerly A,B,C). Physical Education Activities. Calisthenics, marching tactics, apparatus stunts, gymnastic dancing, touchball, soft ball, individual and combination stunts, and tumbling.

Phys.Ed.6A. Intramural Sports. Soccer, speedball, handball, and squash.

Phys.Ed.6B. Intramural Sports. Hockey, and other winter sports.

Phys.Ed.6C. Intramural Sports. Swimming.

Phys.Ed.7A-B-C. Physical Education Activities. Low organized games, relays, pyramid building, apparatus, stunts, volleyball, boxing, wrestling, archery, badminton, horseshoe pitching, and other activities suitable for social recreation.

Phys.Ed.8. Dual Spring Sports. Tennis, golf, etc.

Phys.Ed.9. Rhythms. Tap and social dancing.

Phys.Ed.50. Human Anatomy.

Phys.Ed.51. Mechanics of Movement. Study of the structure of the body and the principles and mechanics of bodily movements.

Phys.Ed.53,54,55‡ (formerly Phys.Ed. 7, 8, 9, Advanced Leaders, and 24, 25, Methods in Physical Education). Methods and Materials in Physical Education. Application of principles of methodology to physical education, analysis and study of the techniques of measurement devices for grading and classifying pupils. Practice in leadership in physical education activities.

Phys.Ed.56. Nature and Function of Play. A study of the philosophy of play and a survey of types of play, their values, and classification of activities according to age and sex differences.

Phys.Ed.60 (formerly Phys.Ed. 60, Athletic Training). Prevention and Care of Injuries. Policies for conditioning of athletes in interscholastic and intercollegiate sports, safety controls, and care and prevention of injuries in physical education activities.

Phys.Ed.61. History of Physical Education. A study of the influence of social, economic, political, and religious factors in the development of

- physical education from ancient times to the present. Special treatment will be given to the origin and development of games and sports.
- Phys.Ed.63. Organization and Administration of Physical Education. Problems of organization, administration, and supervision in required and elective courses, intramural and interinstitutional athletics.
- Phys.Ed.66. Methods and Techniques of Officiating. Study of the fundamental principles and techniques of officiating, qualifications of officials, meaning and intent of rules, demonstrations, and actual practice.
- Phys.Ed.67. Coaching of Athletic Sports (Football). Study of the theory, strategy, generalship, styles of attack and defense, methods of organizing practice and handling men.
- Phys.Ed.68. Coaching of Athletic Sports (Basketball). Study of theory, styles of offense and defense; the conditioning and handling of players.
- Phys.Ed.69. Coaching of Athletic Sports (Track). Instruction and actual practice in track and field events. Lectures on the conduct of meets, track strategy, and practice schedules.
- Phys.Ed.72. Coaching of Athletic Sports (Baseball). Theoretical consideration of, and actual practice in, batting, base running, and methods of playing each position. Special attention is given to "inside baseball" and the development of team play.
- Phys.Ed.73,74,75.‡ Directed Teaching. Six hours of directed teaching per week for three quarters.
- Phys.Ed.101E.§ Principles of Physical Education. A study of the aims, scope, and biological aspects of physical education with special treatment of its place in education.
- Phys.Ed.103E§ (formerly Phys.Ed. 58). Physiological Hygiene. The physical educator's responsibility in diagnosis, amelioration, and correction of physical abnormalities.
- Phys.Ed.133E.§ Special Administrative Problems in Physical Education. Survey of staff organizations in public schools of towns and cities, colleges, universities, and state departments; problems of construction and maintenance of facilities and policies for their use; legal aspects of physical education; special emphasis on intramural and interinstitutional athletic problems. Lectures, discussions, and written reports.
- Phys.Ed.134E.§ The 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.
- Phys.Ed.135E.§ 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.

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

§ The designation "E" after a course number over 100 signifies that the course is of graduate level in the College of Education but does not carry credit for Plans A and B in the Graduate School.

¶ Passing the qualifying examination is prerequisite to this course.

Phys.Ed.136E. § Leadership in Recreation. A study of problems of leadership in community recreation; finance, co-ordination of existing agencies promoting recreation activities, facilities, and public relations.

Phys.Ed.137E. § Recent Literature and Research in Physical Education. Methods of educational research applied to physical education. Critical analysis of existing studies in physical education. Analysis of methods of gathering and interpreting of data.

PHYSICAL EDUCATION FOR WOMEN

Statement of fees.—All activity courses for which registration is required \$1.75 per quarter. Maximum physical education fee per student \$3.50. No physical education fee is charged for Courses 7, 8, 60, 62, 81, 83, 84, 95.

In addition a fee of \$1 per credit is charged for all methods and student teaching courses as indicated in the footnotes. A laboratory fee of \$2 is charged for Phys.Ed. 50 or Phys.Ed. 51.

COURSES FOR UNDERGRADUATE STUDENTS

Phys.Ed.1,2,3,4,5,6,7,8. General Course in Physical Education. This course, offered by the Department of Physical Education for Women, provides a wide program of sports and other activities to meet the varying interests and needs of all the women students. The program offers an opportunity to take courses for the purpose of body building and conditioning and for the acquisition of personal and recreational skills. This course permits choice, based on guidance of the faculty advisers in the following activities:

Aquatics

Canoe Paddling
Swimming, Beginning, Elementary, Intermediate, and Advanced
Diving
Lifesaving
Recreational Swimming and Water Games

Team Sports and Activities

Baseball
Basketball
Field Hockey
Group Body Building
Posture and Daily Life Skills
Introductory Course in Sport Skills
Speedball
Sports and Dance Appreciation (movies, demonstrations, talks by experts on sports and the dance)
Volleyball
Lectures in Physical Education and Health

The Dance

Folk Dancing
Recreational Rhythm
Modern Dance, Elementary and Advanced
Tap Dancing, Elementary and Advanced

Individual Sports and Activities

Archery, Elementary and Intermediate
Badminton
Golf, Elementary and Advanced
Horseback Riding
Individual Body Building (formerly Orthopedics)
Skating, Plain, Figure, and Racing
Tennis, Elementary, Intermediate, and Tournament

§ The designation "E" after a course number signifies that the course is of graduate level in the College of Education but does not carry credit for Plans A and B in the Graduate School.

Recreational Activities for Which No Registration Is Required

Fall:	Winter:	Spring:
Field Hockey	Basketball	Baseball
Horseback Riding	Swimming	Horseback Riding
Volleyball	Winter Sports	Tennis
Swimming	Tap Dancing	Golf
Archery	Tumbling and Stunts	Swimming
Tap Dancing	Rifle Marksmanship	Archery
Rifle Marksmanship		Badminton

Phys.Ed.7.§ Lectures in Physical Education and Health. The essential aspects of the care of personal health.

Phys.Ed.21A-B-C (formerly Phys.Ed. 36-37-38). Freshman Major Team Sports. Fall—field ball, soccer, speed ball; winter—basketball and volleyball; spring—baseball.

Phys.Ed.22A-B-C‡ (formerly Phys.Ed. 40-41-42). Individual Sports and Fundamentals of Movement. Fall—golf and archery; winter—fundamentals of movement; spring—tennis and track.

Phys.Ed.23A-B (formerly Phys.Ed. 43-44). Elementary Games and Folk Dancing. Graded games, singing games, folk dancing, stunts, and self-testing activities for school and playground.

Phys.Ed.24A-B (formerly Phys.Ed. 54-55). Danish Gymnastics. Gymnastics, marching, and apparatus.

Phys.Ed.41A-B-C (formerly Phys.Ed. 46-47-48). Sophomore Team Sports. Further practice in sports included in Phys.Ed. 21A-B-C. Field hockey in the fall quarter. Required of students who are exempt from Phys.Ed. 21A-B-C.

Phys.Ed.42A-B‡ (formerly Phys.Ed. 50-51). Sophomore Individual Sports. Further practices in sports included in Phys.Ed. 22A-C. Required of all students who are exempt from Phys.Ed. 22A-C.

Phys.Ed.43 (formerly Phys.Ed. 77). Advanced Folk Dancing. The racial characteristics and folk arts of people are studied as a background for folk dances.

Phys.Ed.44A-B (formerly Phys.Ed. 64-65). Modern Swedish Gymnastics. Gymnastics, marching, and apparatus.

Phys.Ed.45A-B (formerly Phys.Ed. 59-60)). Swimming for majors. Instruction in strokes and diving, deep water emergency measures. Preparatory for Phys.Ed. 67A-B.

Phys.Ed.46A-B-C (formerly Phys.Ed. 61-62-63). Modern Dance, Elementary. Elementary techniques and group studies in which the purpose is to learn methods of dance composition.

Phys.Ed.47A-B. Tumbling and Stunts. Individual, partner, and group stunts. Activity ranging from exercises for tumbling to advanced tumbling.

‡ Students taking tennis must pay \$1 for a tennis permit. Students taking golf must supply their own equipment.

§ Phys.Ed. 7 must be taken during the first year of residence, preferably during the fall quarter.

- Phys.Ed.50‡‡ (formerly Phys.Ed. 49B). General Anatomy. Lectures and demonstration dissections of the muscles, bones, and joints; circulatory and nervous systems; the abdominal, pelvic, and thoracic viscera.
- Phys.Ed.51‡‡ (formerly Phys.Ed. 49A). Special Anatomy and Mechanics of Movement. Dissection of the body with emphasis on the muscles, bones, and joints. Lectures on the principles of the mechanics of movement with laboratory studies involving the kinesiological analysis of sport techniques.
- Phys.Ed.54 (formerly Phys.Ed. 98). Camp Leadership. Practical work in camp craft; administration of camp program; duties of a counselor.
- Phys.Ed.55. Introduction to Physical Education. This course is concerned with an overview of physical education for those who have a limited background in the area. It deals with philosophy, principles, trends, organization, and administration. Consideration will be given the teacher in a small school situation.
- Phys.Ed.60 (formerly Phys.Ed. 80). Principles of Play. A study of the nature and function of play, factors influencing play interests and a brief consideration of the organization and administration of playgrounds.
- Phys.Ed.61A-B-C‡ (formerly Phys.Ed. 56-57-58). Technique of Teaching Sports. Team games and individual sports. Special techniques for each sport and methods of teaching. Organization of extra-curricular activities. Practice in skills and practice teaching within the group.
- Phys.Ed.62 (formerly Phys.Ed. 67). Physical Examination. Organization and technique of examination and measurement.
- Phys.Ed.63‡ (formerly Phys.Ed. 78). Technique of Teaching Folk Dancing. Practice teaching is done within the group.
- Phys.Ed.64‡ (formerly Phys.Ed. 74). Technique of Teaching Group Gymnastics. A study is made of the principles of progression and methods of teaching gymnastics. Practice teaching is done within the group.
- Phys.Ed.65‡ (formerly Phys.Ed. 75). Integration of Special Methods. In this course the relationship between special teaching techniques in physical education will be studied through a series of observations of public school teachers skilled in each phase of the field. Students will determine problems inherent in each teaching area and will have experience with simple check lists.
- Phys.Ed.66A-B-C (formerly Phys.Ed. 71-72-73). Modern Dance, Intermediate. Group and individual studies and more advanced techniques than in Phys.Ed. 46A-B-C.
- Phys.Ed.67A-B‡ (formerly Phys.Ed. 69-70). Technique of Teaching Swimming. Description of strokes and diving, methods of teaching, practice in teaching and lifesaving.
- Phys.Ed.68 (formerly Phys.Ed. 86). Lifesaving and Water Front Safety. Organization, management, and content of a camp swimming program. Technique and practice of lifesaving skills.
- Phys.Ed.71. Applied Physiology. Laboratory studies involving reactions of the body to various types of exercise with lectures on the mechanisms

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

‡‡ A fee of \$2 is charged for Phys.Ed. 50 and 51 whether taken as a whole or as a part.

- within the body causing these reactions; physiological methods of classification of students in physical education; physiological evaluation of the benefits and dangers of exercise.
- Phys.Ed.73‡ (formerly Phys.Ed. 82). *Technique of Teaching Rhythm*. A consideration of teaching rhythmic activities in elementary, high school, and college classes. Practice teaching within the group.
- Phys.Ed.74A-B (formerly Phys.Ed. 84-85). *Advanced Fundamentals of Movement*. A summary of fundamental elements in movement with particular reference to the teaching approach in elementary and high school classes.
- Phys.Ed.76 (formerly Phys.Ed. 81). *Modern Dance, Advanced*. Laboratory course for application of Phys.Ed. 80.
- Phys.Ed.79. *Massage and Therapeutic Exercise*. A consideration of the principles of massage and the study of conditions to which it is applicable. The practical application of these principles to athletic injuries, foot disorders, paralysis (spastic and flaccid), certain functional and nervous disorders, etc.
- Phys.Ed.80 (formerly Phys.Ed. 83). *Principles of Rhythm*. Rhythm and the dance are studied for the effect on the development of such influences as allied arts, religion, etc. The phases of rhythm and the dance taught at the University of Minnesota are analyzed and their place in the physical education program determined.
- Phys.Ed.81 (formerly Phys.Ed. 87). *Trends in Physical Education*. A survey of historical and contemporary trends in physical education.
- Phys.Ed.82 (formerly Phys.Ed. 88). *Principles of Physical Education*. Philosophy of physical education and principles underlying curriculum building, methods of teaching, and measurements of outcomes.
- Phys.Ed.83 (formerly Phys.Ed. 89). *Health Education, Method and Content*. Study of principles, materials, and problems of health education in preparation for health teaching. Observation and practice in tests and observation techniques of health work. Unit of safety education.
- Phys.Ed.84 (formerly Phys.Ed. 90). *Problems in Physical Education*. A study of problems in the entire field of physical education carried on by individuals or groups.
- Phys.Ed.85A-B (formerly Phys.Ed. 76A-B). *Orthopedic and Remedial Gymnastics*. Principles and techniques involved in the use of exercise for correction of functional and structural defects.
- Phys.Ed.90A-B-C§ (formerly Phys.Ed. 92-93-94). *Student Teaching*. Student teaching in team and individual sports, orthopedic work, and fundamentals of movement in university general physical education classes; in games, health, fundamentals of movement, and rhythm in Minneapolis elementary or high schools.
- Phys.Ed.95A-B (formerly Phys.Ed. 97A-B). *Administration of Physical Education*. Study of organization of physical education and health departments in city, state, and university; construction and equipment; professional ethics.

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

§ Passing the qualifying examination is prerequisite to this course.

COURSES FOR UNDERGRADUATE AND GRADUATE MEN AND
WOMEN STUDENTS

(For graduate courses in the Department of Physical Education for Men see pages 106-107.)

- Phys.Ed.111E.† An Advanced Course in Methods of Teaching in Physical Education. The purpose of this course is to give an overview of the activity program in reference to instructional content and procedures. A comparison of specific fields of activity should reveal existent strengths and weaknesses according to the best scientific findings and empirical standards. Outstanding results of the course should be increased perspective of the common problems in the various activities as well as those peculiar to each activity, possible solutions for conspicuous instructional needs, and a more integrated view of the entire field.
- Phys.Ed.112E.† Supervision of Physical Education. Presents a consideration of the function, organization, and administration of supervision in physical education; adaptations of accepted procedures for inspection, guidance, and training of teachers in the field; standards for qualifications of supervisors; problems peculiar to supervision of physical education.
- Phys.Ed.113E.† Physical Education in the Elementary Schools. Knowledge of the growth and development of the child made basis of a study of existent and potential practices and emphases in program construction of physical education activities; likewise the basis of a study of standards for classification and methods of teaching children. Functions and interrelationships of personnel which are most efficacious in the direction of a program of physical education in the elementary school.
- Phys.Ed.114E.† The Administration of the Health Education Program. Study of various health organizations in city and state; integration of health teaching within the school. Opportunities for guidance and supervision of health teachers by physical educator. Administration of a safety program.
- Phys.Ed.115E.† Recent Literature and Research in Mechanics of Movement. The technique of research and a survey of problems pertinent to physical education which are in need of investigation.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

COURSES FOR UNDERGRADUATE STUDENTS

- P.M.&P.H.2. First Aid. Laboratory demonstrations and practice; general care and observation of patients; emergencies and first aid treatment.
- P.M.&P.H.3. Personal Health. Elementary principles of normal body function; predisposing and actual causes of disease; ways in which disease may be avoided.

† The designation "E" after a course number over 100 signifies that the course is of graduate level in the College of Education, but does not carry credit for Plans A and B in the Graduate School.

- P.M.&P.H.4.¶ Health Problems of Adult Life. Study of personal health and prevention of disease in the family; its relation to community health and disease control, important diseases and their prevention.
- P.M.&P.H.50.¶ Public and Personal Health. Discusses the causes of diseases and of physical defects and presents the fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings.
- P.M.&P.H.52.¶ Health Care of the Family. (See Bulletin of College of Agriculture, Forestry, and Home Economics.)
- P.M.&P.H.53. Elements of Preventive Medicine and Public Health. Susceptibility, resistance, and immunity to disease; methods of spread and the prevention of communicable and degenerative diseases; protection of food, water, and milk; school health work; vital statistics. For public health nurses and students in medical social work only.
- P.M.&P.H.55. Nursing and Social Problems in Gonorrhoea and Syphilis Control. History, prevalence, and epidemiology of gonorrhoea and syphilis, public health control measures; individual and family problems resulting from these diseases. Provision will be made for conferences and case discussions.
- P.M.&P.H.57. Health of Infant and Preschool Child. Maternal and child health in public health program, problems of infant and maternal mortality, growth and development of infant and young child, care and feeding of normal infant; prevention and correction of physical defects.
- P.M.&P.H.58. Maternal and Child Hygiene. (For public health nurses.) 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.
- P.M.&P.H.59. Health of the School Child. Health problems of school life and of children of school age.
- P.M.&P.H.60. Tuberculosis and Its Control. (For public health nurses. Others may be admitted by special permission). History of tuberculosis movement and campaign in the United States; evolution of tuberculosis in the human body, including course of disease from the time tubercle bacilli enter; methods employed in diagnosis of the disease in its various phases of development in the bodies of children and adults; all forms of treatment, including home care, sanatorium, and collapse therapy; rehabilitation; epidemiology; prevention; program of eradication of tuberculosis in animals and man.
- P.M.&P.H.61. Mental Hygiene. History of movement; social importance; factors underlying emotional maladjustments and mental disease; relation to social work, social agencies, and psychiatric practice; illustrative case material.
- P.M.&P.H.62-63. Principles of Public Health Nursing. History and development of public health nursing; a study of the underlying principles of organization, administration, and service—in a program of individual

¶ No student may receive credit for both Course 4 and Course 50; or for 50 and 52.

and family health supervision; methods of co-operative endeavor with social agencies; health teaching as an essential factor in promotion of individual and community well being; deals with the application of the general principles underlying public health nursing to the specialized fields, including maternal and infant welfare, preschool, school, industrial, tuberculosis, and rural nursing.

- P.M.&P.H.65. Field Practice in School Nursing. Working with the school nurse the student observes and participates in the activities included in the school nursing program. Special attention is directed to such problems as organization, relationships, techniques, methods of informal health teaching, provision for handicapped children, and home visiting.
- P.M.&P.H.66. Field Practice in County Nursing. The student accompanies the rural nurse on her rounds and observes and participates in the activities included in a rural nursing program. Special attention is directed to problems of organization for rural health work, methods of health teaching, home visiting, and development of community leadership.
- P.M.&P.H.67. Field Practice with Family Health Agency. 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.
- P.M.&P.H.69. School Nursing Procedures. Objectives, program, and techniques; discussion of procedures usually carried on by the school nurse in the conduct of a health program in both rural and urban schools. Opportunities for practice work will be provided. Open to public health nurses and students with teaching experience.

For courses for graduate students see Bulletin of the Graduate School.

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Curriculum for Training Recreational Leaders



University of Minnesota
August, 1938

Reprint of pages 65 to 70 from Bulletin of College of Education

RECREATIONAL LEADERSHIP

Major Advisers: C. Gilbert Wrenn, Carl L. Nordly

This curriculum, leading to the degree of bachelor of science in education with a major in recreation, is the result of eighteen months' study by a committee appointed by the president of the University. It is supervised by a committee appointed jointly by the president and the dean of the college, consisting of Professor C. Gilbert Wrenn, chairman, Dean Malcolm Willey, Dean E. M. Freeman, Professor C. W. Boardman, Professor T. R. McConnell, and Assistant Professor Carl L. Nordly. The present outline of the curriculum is experimental in nature, since recreation is a somewhat new field of university training and both the committee and the college reserve the right to make major changes in the curriculum as experience may dictate. Such changes will, of course, protect the programs of students registering under its present provisions. Only a limited number of students will be admitted to the junior year of the curriculum in 1938-39.

The professional curriculum begins with the junior year. Students will be selected for entrance to that year in terms of the following criteria:

1. Ninety units of college credit, exclusive of required physical education courses, distributed as follows:

	Minimum Units
a. Biology and psychology (both represented)	12
b. Physical sciences	12
c. Social sciences (must include sociology, political science, and history)	19
d. English composition and speech	
e. Skills courses in one or two of the following fields: art and crafts, music, physical education,* and dramatics	12
f. Sociology 47, Leisure in the Modern World	3
g. General College 129, Survey of Recreation Activities	2
h. Additional electives in fields a-e	18

90

2. Minimum of C average over all college work taken.
3. Entrance examination in recreation trends and activities.
4. Evidence of leadership qualities upon basis of extra-classroom experience during high school and college, health examination, and personal interview.

Lower division courses may be selected from offerings in the College of Science, Literature, and the Arts, the General College, or the four-year curricula in Physical Education, Music Education, and Art Education. Students registered in the lower division of the various colleges and curricula should seek their advisers for this curriculum as follows:

College of Science, Literature, and the Arts: inquire at 106 Folwell Hall
General College: inquire at 200 Wesbrook Hall
Physical Education: Mr. Haislet
Music Education: Mrs. Nohavec
Art Education: Mr. Faulkner

Students transferring from other institutions will be permitted some deviation from the lower division pattern listed in (1) and will be exempted

* The College of Education requires for graduation: men, Phys.Ed. 1, 2, 3. Sports Education for Men, 3 cred.; women, Phys.Ed. 1, 2, 3, 4, 5, 6, 7. General Course in Physical Education, 5 cred. These courses may be used in group requirement (e) thus adding the possibility of 3 elective credits for men and 5 for women.

from the specific course requirements (f) and (g) under (1) above, but they must take the entrance examination provided for in (3) above.

Upper division students in the University or transfers from other institutions desiring to major in recreation in 1938-39 may register in that curriculum in the fall quarter of 1938-39, but with the provision that this is a tentative registration only. During the fall quarter they will be asked to submit evidence of leadership qualities and will be required to take the entrance examination in recreation trends. A study of these data and of the lower division records of the students so registered will enable the committee responsible for the curriculum to select those who will be permitted to remain in the curriculum after the fall quarter. Only those students whose own examination of their lower division work give them some assurance that they have met the requirements under (1) and (2) above are encouraged to register. For those registering in 1938-39 a wide latitude of interpretation will be given to the lower division pattern of courses listed under (1) above. These students should enroll for Sociology 47, Leisure in the Modern World, and G.C. 129, Survey of Recreation Activities. They will be given credit for these lower division courses in this, the first experimental year of the curriculum.

All sophomore students considering the field of recreation as a profession or those who wish to know about leisure problems and opportunities for their personal satisfaction should take Sociology 47 and G.C. 129. The total pattern of lower division courses outlined, including these two in particular, are designed to provide an "education for leisure." Such a program as this provides a nucleus of educational experience that will enable one to live more satisfyingly in a world that increasingly demands social understanding and rich inner resources of creative expression.

MAJOR IN RECREATIONAL LEADERSHIP

This major is designed to enable a student to secure the teaching certificate, if desired, as well as to meet graduation requirements for the College of Education. The teaching certificate should include preparation in one teaching minor as well as in recreation.† Possible minors are physical education, music education, art education, or social studies. With careful program planning a student should be able to meet the requirements of the curriculum as well as the requirements for a teaching certificate in the normal period of six quarters. The following are the requirements for the junior and senior years in the College of Education.

I. PSYCHOLOGY AND EDUCATION

A minimum of eighteen credits is required.

Group A—Two courses required:

No.	Title	Credits	Prerequisite
Ed. 51A-B-C	Introduction to Secondary School Teaching	9	6 cred. in psy.
Ed. 104	Adult Education	2	None

Group B—One course required:

Ed.Psy. 158	Psychology of Adolescence	3	Ed.51A or equiv.
Ed.Psy. 159	Personality Adjustments in Education	3	Ed.51A or equiv.
Psy. 125-126	Psychology of Individual Differences	6	Psy. 1-2; 4-5 or 7, or 5 cred. in statistics

† A second minor is recommended. Students should consult certification laws of the state in which they expect to teach.

Group C—One course required:

No.	Title	Credits	Prerequisite
Soc. 100	Social Psychology	3	Soc. 1 and 6 or Psy. 1-2 and 9 cred. in soc. sci., ed., phil., or psy.
Psy. 130	Vocational Psychology	2	9 cred. in psy.
Psy. 140	Social Psychology	3	9 cred. in psy. or 6 cred. in psy. and either Zool. 1-2-3 or 12 cred. in soc.
Psy. 141	Political Psychology	3	9 cred. in psy.
Psy. 160	Psychology in Personnel Work	3	Psy. 1-2 and Econ. 1-2 or 9 cred. in pol. sci.

Group D—One course required:

Psy. 72	Psychology of the Fine Arts	3	Psy. 1-2
C.W. 130	Motor, Linguistic, and Intellectual Development of the Child	3	12 cred. in psy. or equiv.
C.W. 131	Personality, Emotional, and Social Development of the Child	3	12 cred. in psy. or equiv.
Ed.C.I. 122	Literature for Adolescents	2	Ed. 51C or junior-senior high school teaching experience
Ed.C.I. 169	Extra-curricular Activities	2	10 hrs. in ed. including Ed. 51A
Phys.Ed. 135	Tests and Measurements in Physical Education	3	10 hrs. in phys. ed. and Ed.Psy. 60 or equiv.

II. SOCIOLOGY AND GROUP WORK

A minimum of eighteen credits is required.

Group A—Required courses:

No.	Title	Credits	Prerequisite
Phys.Ed. 136E	Leadership in Recreation	3	10 hrs. in ed.
Soc. 146	Community Organization and the Social Setting of Recreation	3	3 courses in soc. sci. including Soc. 47
Soc. 147	Group Leadership and Organization	3	Soc. 146
Soc. 148	Supervisory Problems in Recreation	3	Soc. 147

Group B—Elective courses:

Soc. 49	Social Pathology	3	10 cred. in soc. or Soc. 1 and 10 cred. in soc. sci. or psy.
Soc. 60	Social Protection of the Child	3	Soc. 49
Soc. 90	Survey of Social Work	3	Soc. 49
Soc. 101	Social Organization	3	Four courses in soc. or Soc. 1 and 15 cred. in soc. sci., ed., phil., or psy.
Phys.Ed. 56* or	Nature and Function of Play	2	Psy. 1-2
Phys.Ed. 60†	Principles of Play	2	Phys.Ed. 23A-B† and Psy. 1-2

* Courses offered in Department of Physical Education for Men.

† Courses offered in Department of Physical Education for Women.

Phys.Ed. 66A-B*	Methods and Techniques of Officiating	2	4A-B-C and 6A-B-C
Phys.Ed. 78*	Elements of Scout Leadership	2	None
Phys.Ed. 79*	Camp Craft and Camp Administration	2	None
or			
Phys.Ed. 54†	Camp Leadership	2	None

III. PREVENTIVE MEDICINE AND PUBLIC HEALTH AND FIRST AID

A minimum of seven credits including one of the two italicized courses is required.

No.	Title	Credits	Prerequisite
P.M.&P.H. 50	Public and Personal Health	2	None
P.M.&P.H. 59	Health of the School Child	3	P.M.&P.H. 50 or 52, or 53
P.M.&P.H. 61	Mental Hygiene	3	P.M.&P.H. 50 or 52, or 53 and 62 which may be taken concurrently
<i>Phys.Ed. 60*</i>	<i>Prevention and Care of Injuries</i>	2	None
or			
<i>Phys.Ed. 83†</i>	<i>Health Education, Method and Content</i>	3	Phys.Ed. 65, P.M.&P.H. 50

IV. ADVANCED SKILLS AND THEIR APPLICATION

A minimum of fifteen credits is required.

Group A—Games, sports, dances, and social recreation:

Minimum of five credits in advanced physical education skills and their application.

Group B—Advanced skills courses and their application in music, arts and crafts, and dramatics:

Minimum of ten credits.

V. STUDENT TEACHING AND PRACTICE IN RECREATION LEADERSHIP

A minimum of fifteen credits if teaching minor is elected; nine if graduating only with major is required.

Special methods and student teaching in minor	Credits
Practice and field work in recreation leadership	9
	6

VI. PARTICIPATION IN LEARNING FROM CAMPUS ACTIVITIES

Without credit.

VII. ELECTIVES

General electives	7
Total	90

MINOR IN RECREATIONAL LEADERSHIP

The minor is provided for students who wish to prepare for discharging recreation responsibilities as a minor or supplementary phase of their teaching or other work. It will count as a minor for a teaching certificate or as a minor for graduation. All students who expect to assume responsibility for

* Courses offered in the Department of Physical Education for Men.

† Courses offered in the Department of Physical Education for Women.

extra-classroom activities in school or any form of community recreational activity, or who may anticipate wishing to act as a lay recreational leader in a community, should find this minor profitable.

I. PSYCHOLOGY AND EDUCATION

A minimum of three credits is required.

No	Title	Credits	Prerequisite
C.W. 82	Later Childhood and Adolescence	3	40 or 80 or equiv.
Ed.Psy. 158	Psychology of Adolescence	3	Ed.51A or equiv.
Ed. 104	Adult Education	2	None
Ed.C.I. 169	Extra-curricular Activities	2	10 hrs. in ed. includ- ing Ed.51A

II. SOCIOLOGY AND GROUP WORK

A minimum of ten credits including italicized courses is required.

<i>Phys.Ed. 136E</i>	<i>Leadership in Recreation</i>	3	10 hrs. in ed.
<i>Soc. 146</i>	<i>Community Organization and the Social Setting of Recreation</i>	3	3 courses in soc. sci. incl. Soc. 47
Phys.Ed. 56*	Nature and Function of Play	2	Psy. 1-2
or Phys.Ed. 60†	Principles of Play	3	Phys.Ed. 23A-B† and Psy. 1-2
Phys.Ed. 78*	Elements of Scout Leadership	2	None
Phys.Ed. 79*	Camp Craft and Camp Administration	2	None
or Phys.Ed. 54†	Camp Leadership	2	None

III. PREVENTIVE MEDICINE AND FIRST AID

A minimum of one credit is required.

P.M.&P.H. 2	First Aid	1	None
Phys.Ed. 25†	First Aid	1	None
Phys.Ed. 60*	Prevention and Care of Injuries	2	None
Phys.Ed. 83†	Health Education, Method and Content	3	Phys.Ed. 65†, P.M.&P.H. 50

IV. ADVANCED SKILLS AND THEIR APPLICATION

	Credits
Minimum of ten credits in two fields including four credits in physical education and minimum of four credits in one other skills field	10

V. PRACTICE AND FIELD WORK IN RECREATION LEADERSHIP

Not required in 1938-39	3
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VI. PARTICIPATION IN, AND LEARNING FROM, CAMPUS ACTIVITIES

Without credit.

VII. ELECTIVES

Electives	3
Total	30

* Courses offered in Department of Physical Education for Men.

† Courses offered in Department of Physical Education for Women.

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General College of the University
1938-1939



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UNIVERSITY CALENDAR

1938-39

Fall Quarter

1938			
September	12	Monday	Extension registration first semester begins
September	15	Thursday	Payment of fees closes, except for new students ¹
September	19	Monday	Entrance tests
September	19-20		Registration for Freshman Week for all new students entering the freshman class
September	19-23		Examinations for removal of conditions
September	20-23		Physical examinations
September	21-24		Registration period, ² College of Science, Literature, and the Arts
September	22-23		Freshman Week
September	23	Friday	Registration days ² for all colleges not included above
September	23	Friday	Payment of fees for new students closes ¹ at 4:30 p.m.
September	26	Monday	Fall quarter classes begin 8:30 a.m. ³
October	1	Saturday	First semester extension classes begin ⁴
October	1	Saturday	Last day for extension registration without penalty
October	15	Saturday	Homecoming Day
October	20	Thursday	Senate meeting, 4:30 p.m.
November	5	Saturday	Dad's Day
November	8	Tuesday	Election Day; a holiday
November	11	Friday	Armistice Day Convocation
November	24	Thursday	Thanksgiving Day; a holiday
December	1	Thursday	State Day Convocation
December	15	Thursday	Senate meeting, 4:30 p.m.
December	12-17		Final examination period
December	15	Thursday	Commencement Convocation
December	17	Saturday	Fall quarter ends, 6:00 p.m.

Winter Quarter

December	22	Thursday	Payment of fees closes for all students in residence fall quarter ¹
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1939

January	3	Tuesday	Entrance tests
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See footnotes on page 4.

January	3-4		Registration ² and payment of fees ¹ for new students in all colleges Registration and payment of fees close at 4:30 p.m., January 4
January	5	Thursday	Winter quarter classes begin 8:30 a.m. ³
January	23	Monday	Extension registration second semester begins
February	4	Saturday	First semester extension classes close
February	6	Monday	Second semester extension classes begin ⁴
February	10	Friday	Last day for extension registration without penalty
February	13	Monday	(Sunday, February 12, Lincoln's Birthday); a holiday (except for extension)
February	16	Thursday	Charter Day Convocation Senate meeting, 4:30 p.m.
February	22	Wednesday	Washington's Birthday; a holiday (except for extension)
March	20-25		Final examination period
March	23	Thursday	Commencement Convocation Payment of fees closes for all students ⁵ in residence winter quarter
March	25	Saturday	Winter quarter ends, 6:00 p.m.

Spring Quarter

March	31	Friday	Entrance tests
Mar. 31, Apr. 1			Registration ² and payment of fees ¹ for new students in all colleges Registration and payment of fees close at 12 m. on April 1
April	3	Monday	Spring quarter classes begin, 8:30 a.m. ³
April	7	Friday	Good Friday; a holiday (except for extension)
May	6	Saturday	Mother's Day
May	11	Thursday	Cap and Gown Day Convocation
May	18	Thursday	Senate meeting, 4:30 p.m.
May	30	Tuesday	Memorial Day; a holiday
June	2	Friday	Second semester extension classes close
June 9-10 and 12-16			Final examination period
June	11	Sunday	Baccalaureate service
June	16	Friday	Spring quarter ends, 6:00 p.m.
June	17	Saturday	Sixty-seventh annual commencement

Summer Session

June	19-20		Registration, first term
June	21	Wednesday	First term Summer Session classes begin 8:00 a.m.
July	4	Tuesday	Independence Day; a holiday
July	27	Thursday	Commencement Convocation

See footnotes on page 4.

July	28	Friday	First term closes
July	31	Monday	Registration and payment of fees for second term close at 4:30 p.m.
			Second term classes begin 8:00 a.m.
September	1	Friday	Second term closes

¹ New students must pay fees on dates announced for registration. Fees of graduate students are due one week after their registration is approved by the dean of the Graduate School.

² Registration subsequent to the date specified will necessitate the approval of the college concerned. See also late fees for late registration, page 55 of the General Information Bulletin. No student will be allowed to register in the University after one week from the beginning of the quarter excepting in unusual cases wherein special circumstances shall justify the appropriate committee of the college concerned permitting registration at a later date.

³ First hour classes begin at 8:15 a.m. at University Farm.

⁴ This date does not refer to correspondence study courses, which may be started at any time during the year.

GENERAL COLLEGE OF THE UNIVERSITY

ADMINISTRATION

Lotus D. Coffman, Ph.D., LL.D., President
Malcolm S. MacLean, Ph.D., Director
Hubert Park Beck, M.A., Assistant Director
Ivol Spafford, Ph.D., Assistant to the Director, in charge of Curriculum Revision
Edmund G. Williamson, Ph.D., Co-ordinator of Student Personnel Services
Edward E. Nicholson, M.A., Dean of Student Affairs
Anne D. Blitz, M.A., LL.D., Dean of Women
John G. Darley, Ph.D., Director of the University Testing Bureau
Bryng Bryngelson, Ph.D., Director of Speech Clinic
Rodney M. West, B.A., Registrar and Secretary of the Board of Admissions

FACULTY

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Hubert Park Beck, M.A., Assistant Professor and Assistant Director
Theodore C. Blegen, Ph.D., Associate Professor of History
Clara M. Brown, M.A., Associate Professor of Home Economics Education
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Ray N. Faulkner, Ph.D., Assistant Professor of General Arts and Art Education
Lucille Fisher, B.S., Instructor in General Arts
Edwin H. Ford, M.A., M.S., Assistant Professor of Journalism
Howard Gilkinson, Ph.D., Assistant Professor of Speech
Vetta Goldstein, Instructor in Home Economics
William Griffiths, M.A., Instructor in Child Welfare
Pearle Haas, M.S., Assistant Professor of Home Life Orientation
Milton E. Hahn, M.S., Instructor in Vocational Orientation
Edwin L. Haislet, Ed.D., Assistant Professor of Physical Education
William L. Hart, Ph.D., Professor of Mathematics and Chairman of the Department of Mathematics
Richard Hartshorne, Ph.D., Associate Professor of Geography
Gerald Hill, B.A., Instructor in General Arts
Venning P. Hollis, Director of the University Photographic Laboratory
Hope H. Hunt, Ph.D., Instructor in Home Economics

- Donald W. Johnson, Ph.D., Assistant Professor of Animal Husbandry
 Palmer O. Johnson, Ph.D., Professor of Education
 Robert T. Jones, B.S.(Arch.), Professor of Architecture
 Hedda Kafka, M.A., Instructor in Home Economics
 Louis H. Keller, M.A., Associate Professor of Physical Education and Assistant
 Director of Physical Education
 Evron M. Kirkpatrick, M.A., Instructor in Political Science
 Robert A. Kissack, Jr., M.A., Assistant Professor and Director of Visual Education
 Lorraine Kranhold, M.A., Instructor in English
 Howard P. Longstaff, Ph.D., Assistant Professor of Psychology
 Helen Ludwig, B.S., Instructor in Home Economics
 Malcolm S. MacLean, Ph.D., Professor and Director of the General College
 Thomas R. McConnell, Ph.D., Professor of Education and Chairman of the Uni-
 versity Committee on Educational Research
 Frank G. McCormick, B.A., LL.B., Professor of Physical Education for Men and
 Director of Athletics
 Lennox A. Mills, Ph.D., Associate Professor of Political Science
 Walter R. Myers, Ph.D., Assistant Professor of Economics and Finance
 Ralph O. Nafziger, M.A., Professor of Journalism
 Carlos W. Nestler, Instructor in Photography
 J. Anna Norris, M.D., Professor of Physical Education for Women and Director
 of the Department of Physical Education for Women
 C. Robert Pace, Ph.D., Instructor in Social Studies
 Robert Phillips, B.S., Instructor in Gardening
 Ralph A. Piper, M.A., Assistant Professor of Physical Education for Men
 Carl J. Potthoff, M.D., Assistant Professor of Biological Studies
 Adam E. Potts, Lieutenant Colonel, Coast Artillery Corps, B.S., Professor of
 Military Science and Tactics
 Henry Schmitz, Ph.D., Professor of Forestry and Chief of the Division of Forestry
 Mary J. Shaw, Ph.D., Instructor in Orientation
 Ivor Spafford, Ph.D., Associate Professor of Euthenics and Assistant to the Direc-
 tor, in charge of Curriculum Revision
 Joseph R. Starr, Ph.D., Assistant Professor of Political Science
 James W. Thornton, Jr., M.A., Instructor in Individual Orientation
 Kate M. Twitchell, Instructor in Music
 Roland S. Vaile, M.A., Professor of Marketing
 Alfred L. Vaughan, Ph.D., Assistant Professor of Physical Science
 Edgar W. Weaver, B.A., Instructor in English
 Paul Wendt, B.A., Production and Research Manager in Visual Education
 Arthur N. Wilcox, Ph.D., Assistant Professor of Horticulture
 Cornelia D. Williams, Ph.D., Instructor and Research Counselor
 Elmo C. Wilson, M.A., Instructor in Contemporary Affairs
 Harold K. Wilson, Ph.D., Professor of Agronomy and Plant Genetics
 C. Gilbert Wrenn, Ph.D., Professor of Education and Research Adviser
 Hedvig Ylvisaker, Ph.D., Instructor in Social Studies

GENERAL STATEMENT

The General College of the University is designed to offer students the opportunity to get a general education. General education is different from, and complementary to, special training for a job, for a profession, or for scholarship in a particular field of knowledge. Special training is important. Fine scholarship in a narrow line is excellent. Such training alone, however, is not enough to help get us ready for living. We spend less than a third of our lives in work. A much greater share of our time is spent in living with our families, rearing children, playing at our hobbies, relaxing in sleep or recreation, and attending to our rights and duties as citizens in American democracy.

Out of these things, which we do away from the job, come many of our greatest satisfactions. If not, then living becomes a futile and sour thing no matter what our job may be. Young men and women may spend years getting their training for life work. However, if their marriages are not successful, if their nerves grow too tense because they do not know how to get the best out of play, sports, or radio, their work itself goes stale. While none of us can discount the importance of work or college training for certain vocations neither should we discount the importance of training ourselves for living. We do not learn to play, or to appreciate music, or to manage our homes, or to vote "by instinct" or "by nature." These things must be earnestly sought and learned and trained for. There was a time, now past, when such education was acquired more or less informally. This is no longer possible.

All of us lead many kinds of lives. We are human animals living in a biological world. As such we have continuous problems of health and disease, food, sleep, exercise. We need to understand as laymen, not as specialists, the functions and services of doctors, nurses, clinics, and hospitals. General education offers, therefore, courses in human biology. We are thinking and feeling beings. Our thinking and emotions set us in ways of behaving. To understand ourselves and others, general education offers courses in psychology dealing with family relations, personality, intelligence, and attitudes. We play our rôles likewise as sons or daughters, husbands or wives, and parents. We are buyers of goods and services. We are patrons of the movies, the symphony concert, the art gallery, and the radio broadcast. We live in a world of powers and gadgets provided by science and engineering ranging from the plane, speedliner, or family car to the electric egg beater in the kitchen or the camera we take on vacations. We are responsible citizens in a complex and swift changing democratic society. As such we cannot afford to leave the whole management of that society to others but must study its problems ourselves and prepare to keep it growing in healthy, democratic ways.

With all these ways of living the General College concerns itself. A study of the courses described in this bulletin will confirm this purpose

of the college. They are not substitutes for courses in the other schools and colleges but useful and valuable in themselves, rounding out the education needed today. The future specialist in art or economics or medicine needs this general education perhaps as much as does the student who has the time, money, health, interest, or abilities for only a year or two of college. These new courses tend to build in the mind of the student a background of understanding of the present world, of his part in it, and of himself. They give him the vital comprehension of *what* other men and women do. They teach him also *why* and *how* things are done. They should, therefore, serve to satisfy his intellectual curiosity, and to prepare him for enlightened living in his public and private relations.

The University General College courses are open to any student admitted to the University. The college requires graduation from an accredited high school or the passing of the university entrance tests, but it does not require any specific pattern of high school subjects. The college provides its courses especially for the following classes of students:

1. Those who desire to pursue courses not offered in other colleges. General College courses are newly designed to satisfy the needs stated above. They do not duplicate or rival but complement the specialized study of other colleges.

2. Those who, for financial or other reasons, have only a limited time to give to college training. Nearly half of all students who enter the University drop out before the beginning of the junior year. There are many causes. Some find themselves unable to secure work or financial support for prolonged training but are, nevertheless, able to have a year or more. Others, through illness, are forced to leave. Others find and prefer to accept the challenge of a job instead of continuing study. Others marry. Others need only two years of general training before undertaking work in special fields and schools outside the University. Others find themselves unable or unwilling to acquire the attitudes of mind and the techniques of study necessary to carry on into professional work.

3. Those applicants for entrance into other colleges who are advised to enter the General College because their high school record and entrance test results indicate mediocre or poor studentship in the past; and therefore success in their chosen curricula cannot safely be predicted for them. The General College offers these students an opportunity through its guidance program and through course work to prove themselves, to develop drive towards attainable objectives. If such drives do not develop, the students may round out their general education in the nonprofessional training offered in the General College.

4. Those who need and wish general orientation in the choice of, and general preparation for, a vocation. Many students are not aware of the variety of vocations which may fit their desires, interests, and abilities until they have surveyed such fields of activity as are dealt with in the courses in the General College of the University. Moreover, general training is usually profitable as preparation for a specific vocation.

5. Those who do not satisfactorily meet the entrance requirements of the other colleges because of lack of training in specific subjects. Whereas the General College does not offer high school subjects, in some instances *satisfactory* work in some college subject may be substituted for high school credit. In other instances a full year of *satisfactory* college work will clear the lacking requirement.

In many cases, however, specific requirements cannot be cleared up with General College courses but must be met by courses in high school, in extension work, in correspondence study, or in other colleges subject to the approval of the General College. Since the interpretation of these regulations is complex, students are advised to consult the counselors or the administration before they make out their programs.

6. Those who are transferred by mutual agreement of the General College of the University and the college in which they are registered.

7. Those who transfer from other institutions who do not meet the standards for advanced standing of the college to which they apply.

Since nearly half of the students who have entered the University in the past have come within one or more of the above classifications, it is believed that the General College will serve the needs of these students in the future more fully and with greater economies to themselves and to the state than has previously been possible. Under a variety of conditions, one, two, or three years of college work in the field of general education is enough for the individual since he may get his special training, except for the professions, on the job.

Many parents and students are not aware of the very keen and strenuous competition that has developed for places in most professional schools and in the professions themselves after college. A boy who wants admission to one of the professional schools of the University has one chance in six of being chosen for admission. Unless he has had a strong study record in high school, tests high in the achievements, interests, and skills demanded for this professional training, his chances are less than one in one hundred. A large majority of the students coming to the University shoot for the wrong mark or for a mark beyond their range. It is the business of the University and of the General College to help students to understand themselves, to help them find out what goals for them are achievable, and to put them on their way.

The faculty of the General College is composed in large part of men and women now on the teaching staffs of the other schools and colleges of the University. They bring to their overview courses the results of their years of study and training in the fields of their specialties, to summarize and apply for General College students the latest discoveries and developments of their own and other scholars in special departments of knowledge. They weave these materials into a comprehensive, realistic, vivid picture of the modern world.

From the foregoing, it is obvious that the General College of the University is by no means intended to replace or rival any other unit in the University or any existing two-year college in the state. It is neither a preparatory nor a vocational training school. It is not a college for the lazy and incompetent, but it is, as President Coffman declares:

A new experiment, an adventure in the field of higher education. It is intended to provide a superior intellectual opportunity for a body of university students whose needs cannot now be adequately met by the existing organization of the University. It will succeed or fail in terms of its service to students. Its courses should be open to the most gifted student in the University. Any student should be privileged to elect membership in the General College.

FOREWORD TO STUDENTS

The General College of the University is your college. It has been built to try to satisfy your desires, to fulfill your needs. In its planning, the colleges and departments of the entire University have co-operated to make its courses attractive and valuable. But your growth and success in this college depend not upon it but upon you. You start on a job, on an adventure in education based upon principles that have long been tested and found good. Upon what you do now, the right things and the wrong things, the mistakes and the triumphs, is dependent, in a way you can only vaguely guess at, the successes and failures of your future at work, at home, and at play. I am asking you, therefore, from the first day of Freshman Week to make the organization and development of your education your first business.

All education is self-education. We offer you courses and instructors but you must take them. No course is complete in itself. It serves merely as a guidebook and opens up for you fields to explore by study, observation, reading, and conversation. Some students take courses as some people read guidebooks—in an easy chair. Others tighten their belts, take the guidebook in hand, and go to find out. To the latter, no courses are easy because there is no end to what can be found out and looked at. To them no courses are uninteresting because each is the beginning of an adventure in the discovery of new things.

Making yourselves at home.—Your first and continuous job at Minnesota is to make yourselves at home. You come here to a strange student city of thousands housed in many buildings on two campuses. Your satisfactions from, and efficiency in, getting the most out of your college life will come from knowing your way around, from getting acquainted with your fellow students, with the faculty who teach you, with the organization in athletics, music, dramatics, debating, literary, and social fields which you may join for your pleasure and profit. And you should know your buildings and classrooms, your library, health service, study halls. For information on fellowships, scholarships, and loans see the bulletin *University Aids for Student Expenses*.

Finding a room.—When you first arrive you will want to find room and board. These matters are important to your health, comfort, and efficiency in college. In selecting a room you should consider heating, lighting, quiet, and cleanliness; its convenience to the campus or car lines; its furnishings, especially the bed. You spend nearly a third of your life in bed, and it pays you to get a good one. You should not hesitate to look at several rooms until you find just what you want. At first, you should board at the Minnesota Union or nearby restaurants until you have found your room and are ready to choose a permanent place to eat. Then pick carefully. If you are away from home for the first time you will be wise to give attention to the regularity and adequacy of your diet. This is a matter of importance to your health. A list of approved boarding and rooming houses for women may be secured at the Housing Bureau, Shevlin Hall. For further information on dormitories, rooms, and boarding places, and the rules governing them refer to pages 41-44 of the Bulletin of General Information.

Taking part in Freshman Week.—Full and active participation in Freshman Week will help you to wear away the preliminary strangeness and give you the first sense of freedom that comes from familiarity with this place where you are to live for several years. During this first period it will pay to keep your

wits about you, to remember things you see and hear rather than to look upon it wholly as a big reception and a good time. A word of warning! Wherever humans congregate, there is gossip and misunderstanding. Many times these lead students to fear and misery. In order to avoid such trouble find out the facts. Find them out by going directly to headquarters. Ask your professors, your dean, or whoever may be responsible and authoritative. Don't, once again, take rumor for fact.

Planning your course.—The next problem that confronts you is the planning of your course in this college and your registration. In this you will have help, for time will be made available to you in Freshman Week for conferences with the faculty and administrative staff in this college. Before these conferences, read the descriptions of the courses set forth in this bulletin and plan tentatively the combination you would like to take. This will give you something definite to carry to your first conference. Also before you meet your adviser it would be sensible to appraise yourself, your motives in coming to college, your needs and desires for various kinds of information and knowledge. Such frank self-examination is the best of all bases for planning anything you do. Altho your registration will be for only a quarter at a time, it is highly desirable in even your first quarter that you look ahead and plan tentatively your program for the year.

Beware of narrow interests.—Some of you will have special interests, for example, social sciences. You will be inclined to select for your program subjects which center in the social sciences. You will probably write down as your courses, first, Social Trends and Problems, second, Our Economic Life, third, Functions and Problems of Government, fourth, Current History, and fifth, Minnesota History. With these and physical education, your program is full—and narrow. I urge you to avoid this narrowness. You should not make the mistake of putting a tight practical limitation on what you study. In such a course as that outlined you have neglected wholly the fields of physical and biological sciences, art, literature, euthenics, and psychology. None of these can you really afford to miss if you consider the long future and what may contribute to your human appreciation and happiness.

Others of you may have specific needs or weaknesses which should be considered in planning your course. If, for example, you find it difficult to express yourself, you should take a course in Oral Communication or the Writing Laboratory or both. If you are having difficulty in getting along with people, the course in Personal Adjustment may help you. It is good strategy to attack weaknesses in your academic preparation as well as in football or in war.

Learning new fields.—Some of you will have no special interest and should, therefore, take as widely varied a course as possible in order to sample the fields of knowledge, to satisfy your curiosity, and to test your interests and abilities. By such a survey you should, in time, find the fields that most keenly interest you and be able to plan an intelligent future course of study and recreation. It might be wise in selecting such a diverse program to pick out fields you know little about rather than those in which you know something or much. Thus, if you know little of land economics and the contribution of plant and animal life to human welfare, take Basic Wealth. Many women students will profit by the course in Physical Science Studies, many men students, by courses in art and music. Both groups will be benefited by studying Euthenics.

Adjusting to college classes.—When you enter your first classes, you will find a considerable adjustment to make. In high school you usually had small classes and discussion groups. Here you will be on your own responsibility. Many of your classes will be large and taught by lectures and demonstrations. Under

such a change you must be wary lest you slip into bad habits of just half listening or watching instead of being constantly alert and active in the taking of notes and getting the full meaning of the materials as they come from the lecturer. The lectures, demonstrations, syllabi and reading lists, and library facilities are furnished by the University as tools with which to do your own work. You are working for yourself, to educate yourself. The responsibility lies with you, not with us nor your parents. You should, therefore, constantly guard also against falling behind in your work, in your reading, note taking, preparation of papers and reports. Many student failures are the result of such habits.

Establishing a routine.—Back work is much more difficult than work ahead. Day-by-day established routine of habit is the only thing that brings satisfactory results. Only by such a process can you possibly prepare for the comprehensive examinations that are given at the end of each year and preliminary quizzes and quarter examinations that precede them. In these matters you are your own master; you control your own academic fate. The University has, however, for your aid in making these adjustments, established certain agencies.

Your counseling program.—The General College is built around the idea of education in living in all the basic relationships of life. It uses two means for providing you with the needed experiences. The first is your classwork in which you become acquainted with broad fields of knowledge and experience which should have a profound effect upon all your thinking and acting. The second is your counseling program in which we try to weigh your strengths and weaknesses, helping you through this personalized service still further to achieve your most satisfactory life adjustment here and after college. Your individual efforts to reach such an adjustment should be the center from which all your education proceeds.

The University maintains an extensive personnel program to help you in solving your individual problems. This program includes the following agencies and individuals: the University Health Service, available for special diagnosis and treatment of your health problems in physical and mental well-being; the Speech Clinic, for special diagnosis and treatment of defective speech habits and related disabilities in reading, writing, and spelling; the University Testing Bureau, for the analysis of your vocational assets and liabilities and information regarding their use in job competition or job training programs; the Employment Bureau, which may be able to assist you in getting part-time jobs for self-support; special faculty counselors in the various colleges who are in a position to give you specific information about courses, job requirements and opportunities, and specialized material in their own fields.

At some time or another you can profitably make use of one or several of these agencies. It will be the job of your General College counselor to talk over your problems with you, to isolate your particular needs for student personnel services, to see that such services are made available to you, and finally to interpret the results in such a way that you can work out the solution of your own problems. Space does not permit us to list in detail the possible problems you may want to have cleared up. They range all the way from a mild lack of interest in a particular course to more serious difficulties such as a major discrepancy between your opportunities and your ambitions or a severe emotional upset. In the counseling service we can help you strike a satisfactory balance between your interests and abilities and opportunities. It has been set up to work with you. You should use it.

Extra-curricular activities.—Student life at the University includes many other activities besides those of the classroom. Some of you may be socially inclined and for you there are the fraternity and sorority. Some may like and have

ability for athletics and games and for you the varsity and freshman sports are open. Still others may be interested in dramatics or forensics or music or publications or student government. These activities are open to all students and such activity may aid materially in making your university career more happy and meaningful. To get advice, go to headquarters for your information; call on those who are in charge of various student activities. The dean of student affairs and his assistants are always ready to help and advise students in these matters.

Some of these activities are time consuming and it behooves the student to work out for himself the proper balance between studies and participation in extra-curricular affairs.

Your attitude and behavior.—I close as I began. The General College of the University is your college. In matters of behavior you must live in this college community on the assumption that your fellow students are decent people to live with; that each tends to his business and to the business of the college to the best of his ability; that what is expected of you is what is expected of acceptable members of society; that class meetings, quizzes, and other scheduled engagements are appointments to be met except in cases of emergency; that much of your college experience will be to your profit or waste in proportion to the generous, kindly, and courteous general spirit you show. In other words, you are on demonstration before the college staff, administration, and others. You will be judged on your behavior in the broadest sense. Psychologists know that childhood behavior carried over into college life in such forms as cheating, whispering, and rowdiness is dangerous since it prolongs bad habits and interferes with the progress of others. If one cheats, he cheats only himself. If, since class attendance is voluntary, he is inattentive or noisy he robs himself and others of instruction. Such behavior is not tolerated. Apart from these suggestions, no compulsion is made. The responsibility is yours.

MALCOLM S. MACLEAN, Director

INFORMATION FOR STUDENTS

In this section we have attempted to set down answers to the most common questions of students. It is imperative that you read the following paragraphs carefully. If you know the details of college procedure, the rules and regulations of the college, the requirements for the degree, and other information, it becomes easier to plan your own education; it will save trouble in the future; and it will be possible for you to get your problems settled more quickly and satisfactorily. The director of the General College and his associates are available for conference at all times by appointment, and they request that students come for help.

REQUIREMENTS FOR THE DEGREE OF ASSOCIATE IN ARTS IN THE GENERAL COLLEGE

Because in the General College we work on the principle that education should contribute to increasing orientation in the basic aspects of life and to mastery of broad fields of knowledge rather than to accumulating course credits, we have set up a series of comprehensive examinations. Altho course quizzes, examinations, and grades will be given to indicate your progress in course work, your progress toward the degree will be measured by your grades on the comprehensive examinations and by your completion of the requirement of physical education. The requirements for the degree of associate in arts are as follows:

1. The passing of six major comprehensive examinations. (For details see pp. 18-20.)
2. a. For men, the completion of three quarters of physical education.
b. For women, the completion of six quarters of physical education.

Exemption from the requirement in physical education may be had only by presenting your case to the director or his associates. Petition for exemption should be filled out and signed at the time of registration. Action will be taken within the next few days and the student notified if exemption is not granted.

3. A final physical examination by the University Health Service a few weeks before commencement. Announcement of the time of this examination will be made in the Official Daily Bulletin and on the bulletin boards of Westbrook Hall.

PLANNING A PROGRAM

Students will normally plan a program of courses which will enable them to complete their preparation for taking three comprehensive examinations at the end of three quarters of residence in the General College.

Modification of this general rule in terms of individual abilities, interests, and needs may be made with the approval of the adviser. Such modifications may increase or decrease the time necessary to complete preparation for the six comprehensive examinations and to secure the degree of associate in arts.

Familiarity with the scope and purpose of the comprehensive examinations (pp. 18-20) and familiarity with the courses as set up in this bulletin (pp. 26-71), are essential for the successful planning of a program. The bulletin should be studied thoroly by anyone who is considering entering the General College or wishing to plan later course work. It is advisable to look ahead and to plan work over a two-year period or longer; by doing so, future troubles of many kinds will be avoided. The important points for you to consider in planning a college educa-

tion are: your own interests and abilities, your weaknesses, the requirements for a degree, and the amount of time available for study.

Staff members are available for program advising. When entering, you may not know whom to ask and, in the rush of fall registration, you may be assigned temporarily to any one who is free. Before the first quarter ends, you should be better acquainted and should select some staff member or ask to be assigned to one for assistance in future program planning. You should plan to carry as much work as you can do well with reasonable effort. Health, outside work, and other legitimate reasons make this a variable amount. Changes in a program may be made after a quarter begins but these should be thoughtful changes based on previous thoughtful program planning.

MODIFICATIONS IN PROGRAMS

1. **Self-support.**—Many students are able to attend college only by working for their partial or complete support. If you are one of these, plan with your adviser to make allowances in your program for any considerable amount of time required by the job. Your efforts are commendable but do not try to do two full-time jobs at once. The result usually appears in low grades and poor health and consequently greater loss of time than if you had planned from the beginning on extending the time for preparing for the degree.

2. **Health.**—Through co-operation with the University Health Service the General College is able to discharge one of its duties to its students, that of watching their health and instructing them through its courses in problems and methods of health care. But such a service is of no value without your co-operation. If you have poor health your adviser will suggest that you carry a lighter program and that you take correspondingly more time to complete your preparation for the degree. This is wise because experience has shown that students who try to carry a full load in spite of poor health usually lose so much time and receive such low grades that their efforts are more poorly rewarded than if they had attempted less.

3. **Courses in other colleges.**—The General College draws upon the resources of the University to extend its services to students, and as a part of program planning in terms of students' abilities, interests, and needs, students are sometimes advised and sometimes wish to elect courses in other colleges as a part of their work in the General College. Ordinarily such a program is possible only after a satisfactory first quarter of work in this college. In some instances such courses contribute to preparation for the degree of associate in arts, but where they do not, students must expect to devote a longer time than six quarters to the General College. Again, in conference with your adviser, you will be counseled in terms of your aims and needs.

4. **Military drill.**—The course in Military Science and Tactics, culminating in a reserve officer's commission in the United States Army, is an example of a possible combination as discussed in the paragraph above. Your attention is called to this course (see pp. 68-71), altho the course is no longer required of every male student.

DETAILS OF REGISTRATION

1. Bring with you this Bulletin of the General College.

2. If you are registering at the University for the first time, bring your *admission certificate* together with the *Registrar's Form Letter (A109)* that accompanied it, or your record of advanced standing. If you have been enrolled before at the University bring your *blueprint record*.

3. *Have ready a list of the comprehensive areas and courses in them that you have decided you want* after having carefully studied this Bulletin of the General College. This list will be the basis for your conference with an adviser and should include the name of the course and the hours and days the course meets. Previous to program advising, specific procedures for fall quarter registration will be explained to small groups of students. An information blank to be filled out by the student will also be given out at this time. When you and your adviser have finally decided what your program is to be, you will copy it carefully onto the registration blank. Be sure to keep a copy of this program; add to your copy the location of each class by building and room number. This information can be obtained from your adviser when you register or from the bulletin boards in Westbrook Hall, the General College building.

4. **Tallying.**—Before you take your program to the University Armory to obtain your fee statement, you must have your program checked against class lists. A clerk will do this and stamp your program "tallied." The information blank completely filled out is to be turned in at this time. No program will be accepted at the Armory unless it has been so stamped.

5. A basic diagnostic testing program has been set up for all students entering the General College. This will be given in the fall quarter during Freshman Week; for other quarters, at a time especially set aside for it. Registration in the General College is incomplete until this testing has been completed.

6. **Miscellaneous questionnaires and blanks.**—The booklet of instructions for Freshman Week will tell you where you are to be at certain times; follow those directions carefully. You will be told, further, where to hand in various little cards and questionnaires. Fill those out according to the directions and be sure to leave them at the proper places.

7. **Fee statements.**—When you present your tallied program at the University Armory you will be given a fee statement. Pay fees on or before the last date on the fee statement. You will save yourself much time and tediousness of waiting in line if you pay these by mail. Be sure to retain the receipt (placed in your post-office box in the Administration Building, if you pay by mail) for presentation to your course instructors on their request.

8. **Course registration.**—The last step in the registration procedure is that of appearing in class at the first meeting of each course and leaving your name with the instructor as he directs. It is important that you leave your name, for the class rolls are obtained only in this way; if you fail to register with the instructor he has no other record of your enrolment.

ADDITIONAL ADMINISTRATIVE REGULATIONS

Adding or canceling courses.—Adding new courses to your program is permitted during the first two weeks of each quarter. Courses may be canceled at any time under certain conditions. To add or cancel a course during the first two weeks discuss the changes desired with the adviser who helped you plan your program and he will sign a cancel-add slip for you if the changes are approved. Canceling a course after this period must be done through the director or his administrative assistants.

Examinations.—Examinations being the chief means by which the college and the student himself can judge of his performance and progress, much work has been and is being done to develop fair and complete tests. The student is therefore obligated both to himself and the college to prepare adequately for these examinations and to take them at the regular times announced by instructors.

Make-up examinations will be given on the third Saturday of each quarter unless that day or the preceding day is a holiday. No student may take any make-up examination without official permission or a Health Service excuse. A \$5 fee will be charged for examinations if they are not taken on the first make-up day.

Auditing.—Students from other colleges, who have the permission of their college, and adult auditors are welcome to take one or more courses in this college, the accrediting of the courses for the former resting with the college in which they take their specialized work. Auditors are charged the same fees as students regularly registered.

Grades.—Letter grades A, B, C, D, E, F, or I for individual courses will be sent to each student at the end of each quarter. A grade of E in a course means a poor quality of work, perhaps explained by illness or other emergency. An E grade must be removed by the next make-up examination date or it becomes an F. The grade of I means that for some reason the student has not completed all the work in the course for the quarter; he has missed an examination or quiz or has not handed in a paper. This missing work must be completed by the make-up day in the following quarter or the I grade may become an F. The blueprint at the end of the year will give not only the letter grades but also the percentile or ranked standing in each class.

General College convocation hour.—Because of the many general educational problems of deep concern to all students as exemplified by the questions asked the administration and counselors in the past four years, the administration reserves the right to call a required convocation hour on any Tuesday at the fourth period for all new students. Members of the faculty, administration, and student body will discuss these common problems. Attendance will be taken and only Health Service excuses accepted for absence.

Combination programs.—Courses in other colleges and departments of the University are open to General College students under the following conditions only. All requests for such courses must be cleared with the college counselors by the date published in the Official Daily Bulletin. No requests will be approved after this date. All requests must be approved by the director of the General College and the proper officer of the college in which the course is given. Approval of such courses is granted to (a) students who have in high school demonstrated special interest and ability in a field in which the General College does not have courses, such as Latin, engineering drawing, music techniques, (b) students who in the general courses in this college have found an interest and demonstrated an apparent ability which properly leads them to try out specialized courses in the field. Thus, a girl who has had a successful year in the General College art or eutenics courses may be ready to try specialized work in art education or home economics. A boy who has had a year of general economics studies may be ready to apply for approval of a tryout in elementary accounting or statistics. *Approval will not be granted until by demonstration of work already accomplished in high school or in the General College the student shows himself ready for a tryout course.*

Transfer to other colleges.—General College students may be transferred to other colleges of the University after a period of successful achievement in this college. This period must be long enough (a full year to two full years) to give to the officers of this college and of the receiving college evidence of the student's real ability, keen interest, and serious purpose in the specialized field of his choice. A high level of work in this college, the demonstration of a mature attitude, together with test, clinical, and counseling evidence that the student will profit by professional training are required by the director in order to obtain his recommendation for transfer. He looks upon such a recommendation as a statement of

his faith in the student, a faith that must be founded on as full evidence as can be had.

The College of Education has set the following standards for transfer of students from the General College: that students have a minimum of one year of residence in the General College and that during that year they have taken at least three comprehensive examinations on which they have earned a median percentile rank of 50. Credits for this work will be evaluated only after the student has earned at least 36 credits while registered in the College of Education. A maximum of 18 credits will be granted for each comprehensive examination except that on Contemporary Affairs, for which 9 credits will be granted, or 18 for two comprehensive examinations in Contemporary Affairs taken in succeeding years.

The University does not bar the way to any student who, in the General College or any other college, gives a demonstration in his class work and examinations of hard-hitting, interested, and competent studentship. With a good record, transfer into specialized professional work is not difficult. Without such a record, it would be unwise for the student to attempt it. The General College counselors will make clear to anyone who asks the details, what constitutes a record warranting transfer.

Students must file application for transfer at the registrar's office and in the General College office on or before the dates specified in the Official Daily Bulletin and on the college bulletin boards.

COMPREHENSIVE EXAMINATIONS

Scope.—The General College comprehensive examinations cover course work in four different orientation areas: individual; home life; social-civic; and vocational orientation; and in six general areas: euthenics; general arts; human development; literature, speech, and writing; physical sciences; and the social sciences. In addition, a comprehensive examination in the psychology area is available in 1938-39 to students enrolled before September, 1938. Psychology will be so integrally a part of the orientation areas that no special comprehensive will be set up after this year. The comprehensive examinations are designed to cut across course lines in order to correlate all course work—reading and studying—into one complete whole. Everything learned or read will be of value in meeting examinations. These examinations require that education be continuous, that work be self-propelled in all lines, that the interrelationship between knowledge be developed, and that experience be meaningful and of value.

Those students who enter in 1939-40 will take comprehensive examinations in personal, home life, social-civic, and vocational orientation for graduation. Each of these areas consists of a required core of three two-hour quarter courses and a group of single courses from which additional electives may be selected to provide adequate preparation for a comprehensive examination. The total course hours within an area, including those in the core, will run from twelve to eighteen hours depending upon other related experiences which the student may have had. Other comprehensives from which the fifth and sixth may be selected are euthenics; general arts; human development; literature, speech, and writing; physical sciences; and the social sciences. Courses selected for special preparation in one comprehensive may not be selected for preparation in another.

For the year 1938-39 all entering students may select their comprehensives from one or more of the orientation areas or from the general areas. Those students who enrolled in the General College previous to the fall of 1938 may continue progress toward graduation through preparation for subject-matter compre-

hensives alone. Work is to be planned with comprehensives in mind—flexibility for meeting individual needs and interests are provided within the areas. It is important that every student plan his or her program in such a way as to make adequate preparation. Whenever preparation is complete, the examinations may be taken. It is neither necessary nor required that a student take all courses in a group in order to take a comprehensive examination in that field. Special examination days will be arranged during each quarter. If you fall in the low score brackets on a comprehensive examination, it simply means that your preparation is incomplete and the examination may be taken again after more course work or study in that field and on payment of a fee for the additional examination.

Course examinations.—A student who wishes to go through to the comprehensive examination without taking quizzes, mid-quarters, or finals for a course within the area may do so only under the following conditions: that he signify his desire to do this in writing during the first two weeks of the quarter in which the course is taken, and have this approved by the director or one of the administrative assistants in the General College office. A grade of X will then be given for the course for the quarter, and this grade will be carried on the record until the end of the year, when the comprehensive examination is taken. The comprehensive grade will at that time be substituted for the quizzes, mid-quarter, and examination part of the course grade. All assigned papers, projects, and problems of the course must be completed at the time they are due. Under no circumstances may a comprehensive grade be substituted for such assignments.

Time.—The comprehensive examinations are set during examination week at the close of the spring quarter, at which time most students will have completed their course work in two or three various areas. Since it is the policy of the General College to allow students to take examinations whenever they are prepared to meet them, one examination day will be announced near the close of the fall and winter quarters at which time students will be allowed to take one comprehensive examination if they are prepared.

Requirements.—All students are required to complete six comprehensive examinations for the degree of associate in arts. These may be selected from any areas set up but no more than two may be taken in the social sciences or in ethnics and no more than one in any of the other areas except that students who took one in General and Contemporary Affairs Studies previous to 1938-39 may take two others in the field of the social sciences. Only students who have entered the General College for the first time in the spring quarter are exempt from the June examinations. The General College requires no formal time or attendance requirement as a basis for these examinations but *students who wish to take a comprehensive in any area without first completing a suitable group of General College courses in that area must obtain consent from their program adviser or one of the counselors. A student's course work and his other experiences in and out of school will be considered in judging whether or not his preparation has been adequate.*

A student enrolled for a full program should expect to prepare himself for, and take, three comprehensive examinations each year. One enrolled for part time or doing a good deal of outside work, except under unusual circumstances, should center his attention on two comprehensive areas, expecting then to take a longer time to complete the work for a degree. All students in the General College for one year must take comprehensive examinations if they are planning to continue in the General College, to transfer to another college, or to work for the associate in arts degree. For those who wish to transfer, the comprehensives give strong evidence for granting or withholding recommendation. Students who plan to complete six

comprehensive examinations for graduation with five quarters of residence or less in the University will be required to pay special fees.

Exemptions.—Exemption from one or more comprehensive examinations for the degree of associate in arts may be given for course work in other colleges or universities if the student passes at least fifteen hours of work, or its equivalent, in a single field of knowledge. All such exemptions must be approved by the director.

Re-examinations and fees.—Any of the General College comprehensive examinations may be retaken on the scheduled examination date. A fee of \$5 for retaking an examination is charged. If during the interim between examinations the student registers for more course work in that field the re-examination fee may be waived by the registrar. One comprehensive examination is allowed for each quarter in residence in the General College. Extra comprehensive examinations require the payment of a \$5 fee.

Eligibility.—The conference regulations regarding eligibility of General College students for intercollegiate athletics state among other requirements that students must complete one half of the work for the degree of associate in arts to be eligible to compete during the sophomore year. This means that students who plan to participate in varsity athletics must pass three comprehensive examinations in addition to meeting all other requirements of the conference in order to be eligible.

COMPREHENSIVE AREAS* AND COURSES

1. Individual Orientation† (pp. 26-27). Individual Orientation core and additional electives.
2. Home Life Orientation† (pp. 27-29). Home Life Orientation core and additional electives.
3. Social-Civic Orientation† (pp. 29-32). Social-Civic Orientation core and additional electives.
4. Vocational Orientation† (pp. 32-33). Vocational Orientation core and additional electives.
5. Euthenics Studies (pp. 33-36).
Any combination of these groups.
Human Development and Personal Adjustment
Selecting and Maintaining a Home;
Renting, Buying, or Building
Clothing Selection, Purchase, and Care
Food Selection and Purchase
Income Management, Individual and Household Buying
8. Literature, Speech, and Writing Studies (pp. 43-45).
Literature Today and one or both
Oral Communication
Writing Laboratory
9. Physical Science Studies (pp. 46-48).
Physical Science Studies
10. Psychology Studies‡ (pp. 48-49).
Practical Applications of Psychology
Human Development and Personal Adjustment
11. Social Science Studies (pp. 49-58).
6-9 hours in any one group with additional electives from other groups.
Economics Studies
History and Government Studies
Sociological Studies
Formation of Public Opinion
Seminar in Social Problems
6. General Arts Studies (pp. 36-40).
Art Today§ and any two groups.
Music Today
Film and Drama
Literature Today
Clothing Selection, Purchase, and Care
Selecting and Maintaining a Home;
Renting, Buying, or Building
Home Landscaping and Gardening
7. Human Development Studies (pp. 41-43).
Human Biology
Human Development and Personal Adjustment

* A comprehensive area usually represents 12 to 18 quarter hours of course work and is made up of one or more basic courses with additional electives selected under guidance.

† Open as a comprehensive only to students entering fall quarter of 1938 or later.

§ A basic course in 1938-39. To be replaced by a General Arts course in 1939-40.

‡ Open as a comprehensive only to students who entered previous to the fall quarter of 1938.

GENERAL COLLEGE SCHEDULE OF FALL COURSES, 1938-39

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
I	Physical Science Social Trends and Problems I Writing Lab., Secs. 1, 2	Physical Science Art Today, Secs. 1, 2, 3, 4 Oral Communication, Sec. 1 Writing Lab., Sec. 7	Physical Science Soc. Trends and Problems I Writing Lab., Sec. 1	Physical Science Art Today, Secs. 1, 2, 3, 4 Oral Communication, Sec. 1 Writing Lab., Sec. 7	Physical Science Soc. Trends and Problems I Writing Lab., Sec. 2
II	Basic Wealth Contemporary Society I Writing Lab., Secs. 1, 2	Art Today, Sec. 3 Minnesota History Oral Communication, Sec. 2 Writing Lab., Sec. 7	Basic Wealth Contemporary Society I Writing Lab., Sec. 1	Art Today, Sec. 3 Minnesota History Oral Communication, Sec. 2 Writing Lab., Sec. 7	Basic Wealth Writing Lab., Sec. 2
III	Amer. Citizen and His Govt. Writing Lab., Secs. 3, 4	Art Today, Sec. 3 Formation of Public Opinion Home Life Orientation I Straight and Crooked Think- ing Writing Lab. Clinic	Art Today, Secs. 2, 4 Amer. Citizen and His Govt. Writing Lab., Sec. 3	Art Today, Sec. 3 Formation of Public Opinion Home Life Orientation I Straight and Crooked Think- ing Writing Lab. Clinic	Art Today, Secs. 2, 4 Amer. Citizen and His Govt. Writing Lab., Sec. 4
IV	Individual Orientation I Literature Today Mathematics of Business Writing Lab., Secs. 3, 4	Current History, Sec. 1 Writing Lab. Clinic	Art Today, Secs. 2, 4 Individual Orientation I Literature Today Mathematics of Business Writing Lab., Sec. 3		Art Today, Secs. 2, 4 Current History, Sec. 1 Literature Today Mathematics of Business Writing Lab., Sec. 4
VI	Human Biology Psychology (1:00-2:20) Photography Select., Maintain. a Home Writing Lab., Secs. 5, 6	Art Today, Sec. 1 Survey of Recreation Activ- ities Writing Lab., Sec. 8	Human Biology Psychology (1:00-2:20) Photography Select., Maintain. a Home Writing Lab., Sec. 5	Art Today, Sec. 1 Survey of Recreation Activ- ities Writing Lab., Sec. 8	Human Biology Psychology (1:00-2:20) Select., Maintain. a Home Writing Lab., Sec. 6
VII	Music Today Our Economic Life Photography Vocational Orientation I Writing Lab., Secs. 5, 6	Art Today, Sec. 1 Current History, Sec. 2 Oral Communication, Sec. 3 Writing Lab., Sec. 8	Music Today Our Economic Life Photography Vocational Orientation I Writing Lab., Sec. 5	Art Today, Sec. 1 Current History, Sec. 2 Oral Communication, Sec. 3 Writing Lab., Sec. 8	Our Economic Life Writing Lab., Sec. 6
VIII	Home Landscaping and Gardening Music Today Photography		Home Landscaping and Gardening Music Today Photography		Home Landscaping and Gardening

Social Problems Seminar—Hours to be arranged.

GENERAL COLLEGE SCHEDULE OF WINTER COURSES, 1938-39

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
I	Physical Science Soc. Trends and Probs. II Writing Lab., Secs. 1, 2	Physical Science Art Today, Secs. 1, 2, 3, 4 Oral Communication, Sec. 1 Vocational Orientation I Writing Lab., Sec. 7	Physical Science Soc. Trends and Probs. II Writing Lab., Sec. 1	Physical Science Art Today, Secs. 1, 2, 3, 4 Oral Communication, Sec. 1 Vocational Orientation I Writing Lab., Sec. 7	Physical Science Soc. Trends and Probs. II Writing Lab., Sec. 2
II	Basic Wealth Contemporary Society II Psychology Writing Lab., Secs. 1, 2	Art Today, Sec. 3 Minnesota History Oral Communication, Sec. 2 Writing Lab., Sec. 7	Basic Wealth Contemporary Society II Psychology Writing Lab., Sec. 1	Art Today, Sec. 3 Minnesota History Oral Communication, Sec. 2 Writing Lab., Sec. 7	Basic Wealth Psychology Writing Lab., Sec. 2
III	Functions and Problems of Government Human Development Renting, Buying, or Building a Home Writing Lab., Secs. 3, 4	Art Today, Sec. 3 Formation of Public Opinion Home Life Orientation II Writing Lab. Clinic	Art Today, Secs. 2, 4 Functions and Problems of Government Human Development Renting, Buying, or Building a Home Writing Lab., Sec. 3	Art Today, Sec. 3 Formation of Public Opinion Home Life Orientation II Writing Lab. Clinic	Art Today, Secs. 2, 4 Functions and Problems of Government Human Development Writing Lab., Sec. 4
IV	Individual Orientation II Literature Today Mathematics of Business Writing Lab., Secs. 3, 4	Current History, Sec. 1 Writing Lab. Clinic	Individual Orientation II Literature Today Mathematics of Business Art Today, Secs. 2, 4 Writing Lab., Sec. 3		Current History, Sec. 1 Literature Today Mathematics of Business Art Today, Secs. 2, 4 Writing Lab., Sec. 4
VI	Clothing Selection Human Biology Photography Writing Lab., Secs. 5, 6	Clothing Selection Art Today, Sec. 1 Writing Lab., Sec. 8	Clothing Selection Human Biology Photography Writing Lab., Sec. 5	Film and Drama, Sec. 1 Art Today, Sec. 1 Writing Lab., Sec. 8	Clothing Selection Human Biology Writing Lab., Sec. 6
VII	Music Today Photography Vocational Orientation II Writing Lab., Secs. 5, 6	Art Today, Sec. 1 Current History, Sec. 2 Individual Orientation I Oral Communication, Sec. 3 Our Economic Life Writing Lab., Sec. 8	Music Today Photography Vocational Orientation II Writing Lab., Sec. 5	Art Today, Sec. 1 Current History, Sec. 2 Individual Orientation I Oral Communication, Sec. 3 Our Economic Life Writing Lab., Sec. 8	 Writing Lab., Sec. 6
VIII	Home Landscaping and Gardening Music Today Photography	 Film and Drama, Secs. 1, 2	Home Landscaping and Gardening Music Today Photography	 Film and Drama, Sec. 2	Home Landscaping and Gardening
IX		Film and Drama, Secs. 1, 2			

Social Problems Seminar—Hours to be arranged.

GENERAL COLLEGE SCHEDULE OF SPRING COURSES, 1938-39

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
I	Physical Science Soc. Trends and Probs. III Writing Lab., Secs. 1, 2	Physical Science Art Today, Secs. 1, 2, 3, 4 Oral Communication, Sec. 1 Vocational Orientation II Writing Lab., Sec. 7	Physical Science Soc. Trends and Probs. III Writing Lab., Sec. 1	Physical Science Art Today, Secs. 1, 2, 3, 4 Oral Communication, Sec. 1 Vocational Orientation II Writing Lab., Sec. 7	Physical Science Soc. Trends and Probs. III Writing Lab., Sec. 2
II	Basic Wealth Contemporary Society III Introduction to Philosophy Psychology Writing Lab., Secs. 1, 2	Art Today, Sec. 3 Home Life Orientation I Oral Communication, Sec. 2 Writing Lab., Sec. 7	Basic Wealth Contemporary Society III Introduction to Philosophy Psychology Writing Lab., Sec. 1	Art Today, Sec. 3 Home Life Orientation I Oral Communication, Sec. 2 Writing Lab., Sec. 7	Basic Wealth Introduction to Philosophy Psychology Writing Lab., Sec. 2
III	International Relations Personal Adjustment Contemporary Society I Writing Lab., Secs. 3, 4	Art Today, Sec. 3 Home Life Orientation III Writing Lab. Clinic	Art Today, Secs. 2, 4 International Relations Personal Adjustment Contemporary Society I Writing Lab., Sec. 3	Art Today, Sec. 3 Home Life Orientation III Writing Lab. Clinic	Art Today, Secs. 2, 4 International Relations Personal Adjustment Writing Lab., Sec. 4
IV	Individual Orientation III Literature Today Mathematics of Business Writing Lab., Secs. 3, 4	Current History, Sec. 1 Writing Lab. Clinic	Art Today, Secs. 2, 4 Individual Orientation III Literature Today Mathematics of Business Writing Lab., Sec. 3		Art Today, Secs. 2, 4 Current History, Sec. 1 Literature Today Mathematics of Business Writing Lab., Sec. 4
VI	Food Selection and Purchase Human Biology Photography Writing Lab., Secs. 5, 6	Art Today, Sec. 1 Income Management Writing Lab., Sec. 8	Food Selection and Purchase Human Biology Photography Writing Lab., Sec. 5	Art Today, Sec. 1 Income Management Film and Drama, Sec. 1 Writing Lab., Sec. 8	Food Selection and Purchase Human Biology Writing Lab., Sec. 6
VII	Music Today Photography Vocational Orientation III Writing Lab., Secs. 5, 6	Art Today, Sec. 1 Current History, Sec. 2 Our Economic Life Individual Orientation II Oral Communication, Sec. 3 Writing Lab., Sec. 8	Music Today Photography Vocational Orientation III Writing Lab., Sec. 5	Art Today, Sec. 1 Current History, Sec. 2 Our Economic Life Individual Orientation II Oral Communication, Sec. 3 Writing Lab., Sec. 8	 Writing Lab., Sec. 6
VIII	Home Landscaping and Gardening Music Today Photography	 Film and Drama, Secs. 1, 2	Home Landscaping and Gardening Music Today Photography	 Film and Drama, Sec. 2	Home Landscaping and Gardening
IX		Film and Drama, Secs. 1, 2			

Social Problems Seminar—Hours to be arranged.

A LIFE-CENTERED CURRICULUM

For the past six years the General College has been asking its students what they really need in general education. A great many of the six thousand students who have been in the college during these years have helped us to see these needs more clearly. A representative group of one hundred General College students and their families have given even more generously of their time and thinking during the past two years to provide information helpful in building a curriculum. This past year we asked sixteen hundred former students of the University of Minnesota, young adults who had had one or more years of study here, some entering in 1924-25, others in 1928-29, to tell us how life looks to them today. As a result of these and other findings we are reorganizing the curriculum in this college. The first significant changes are the introduction of certain core courses dealing with basic relationships of life.

The first of these four basic needed areas of general education, our students tell us, is for vocational orientation. Not only in the studies made by the General College but in other explorations of the needs of youth, including that of thirteen thousand young people in the state of Maryland and a good many more thousands in Chicago, Detroit, and Oakland, we learn that young people want to find out what job to do. They are troubled by unemployment and uncertainty; they are confused by the tremendous number of possibilities for work of all kinds and varieties; they are bewildered by many pressures, such as the success stories in the newspapers, magazines, and movies, and by families who want them to do one thing while they want to do another. We are building, therefore, a core course in vocational orientation to spread before the General College students the variety of the work of the world, the real dignity and worth of all socially useful work, the way in which all kinds of jobs are related to one another, and how students can learn most wisely and well what particular broad area of work they would be most successful in or more likely to fail in. For this course we shall draw together information from many sources—from the census, from youth studies, from employment offices, from experts in various occupations, and particularly from the university resources, such as the University Testing Bureau and the College Counseling Service.

But men and women are not just job holders, not plow horses or pack animals. Outside the job, they have other important ways of life. One of these is found throughout all the span from birth to death in an individual's relations in his home and with his family. As a baby he is cared for by parents; as a youngster he lives with them, with brothers and sisters and grandparents; as a college student he has adjustments to make with his family; and shortly after college he begins establishing a family of his own. Always, whether he be married or not, he has a home of some sort. Some people are inclined to think that home and family life can be taken for granted, that we do not need training for marriage or for maintaining a home or for rearing children but our students of the past and present tell us that this is not so. On the contrary, the divorce rate is rising; marriages have much more chance of going on the rocks than they did even just a few years ago. Homes, they find, can be desperately unhappy or grand places in which to live, depending upon the training and care that goes into us who make them. Therefore, we are building a course in home and family living to satisfy this need.

In a dictatorship we would have no need or right to give the third of these core courses, since all education under fascism or nazism or communism is directed at making the individual young man or woman realize that he is unimportant and that the state is everything. In a democracy, however, it is essential that we learn as soon as we are able that we are not merely work animals nor just members of a family, but that we have also membership in a larger group, in our neighborhood, community, village, town, city, state, and nation. It means that individual well-being and group welfare are inseparably bound together and that we must work together as members of the larger society to improve our economic and political and social situation. In order that we may learn what are our responsibilities in the larger society of America, it is essential that we study the functions and structures and the meanings of our society. Therefore, we are building on the demand of our students, a third core course in orientation to social and political and economic responsibility.

Aside from our work life, our home life, and our social and civic life, each of us has an individual life of his own. We build a philosophy, an inner way of looking at things, through participation in sports and games, through reading and art and music, through understanding our bodies and their drives and hungers, and through insights into minds and emotions of those we love or hate, of those with whom we work or play. Our students ask us, therefore, to develop a fourth core course which will deal directly with these matters and will help the students of the future to pool their experiences, pleasant and unpleasant, of all kinds into a pattern that will give life real meaning and real value.

DESCRIPTION OF COURSES

INDIVIDUAL ORIENTATION

These three courses comprising a total of six hours during the year are the core of the comprehensive examination in individual orientation. In addition, each student according to his needs and interests should elect, with the assistance of a program adviser, six or nine hours or even more of course work which will contribute to his individual orientation. Courses may have value for individual orientation for one student and not for another. Among those having the most general value in this respect are:

Biological Science Studies:

The Human Body in Operation in Health and Disease

Ethnics Studies:

Food Selection and Purchase
Clothing Selection, Purchase, and Care
Human Development and Personal Adjustment
Income Management, Individual and Household Buying

General Arts Studies:

Art Today
Music Today

General Arts Studies (cont.):

Film and Drama
Piano Playing for Pleasure
Survey of Recreation Activities

Literature, Speech, and Writing Studies:

Oral Communication
Writing Laboratory

Physical Science Studies:

Physical Sciences

Psychology Studies:

Practical Applications of Psychology

Social Science Studies:

Social Trends and Problems

G.C.7f,w-8w,s-9s—Fall, winter, and spring quarters. INDIVIDUAL ORIENTATION CORE.

“Know thyself” is a command sometimes as difficult as it is fascinating to carry out. To do this the individual must try to answer questions like these: What is personality? How does it originate? Of what is it composed? Can it be altered? What makes us act like human beings? And, since we are all human beings, why don't we all act exactly alike? Why do some of us find it so easy to make friends and get along with others while many of the rest of us experience friction, difficulty, loneliness, or failure in our attempts to deal with others? Where do social customs come from, and is it important to understand them? What are play, recreation, and leisure time? What is their meaning in the modern world? What are their functions for each of us individually? What are philosophies and religions? Can anyone be happy and completely adjusted who has no religious beliefs and no “philosophy of life”? What do we mean by “morals” and “codes of ethics”? Who decides what is “right” and what is “wrong” behavior? What is the meaning of the universe and how does each of us fit into it?

Exploring this field takes us a long way on the road toward knowing ourselves, our complex modern world, and our places in it. But if we stopped with merely knowing these things—however interesting they are—we should be leaving our real task only half done.

Knowing one's self and one's place in the world *may* be at first sadly disillusioning. If we do not like what we discover, is there anything we can do about it? Can we change ourselves? or other people? or the world? or our relationships with them or it? Can we make more satisfying to ourselves our personalities? our health and vigor? our social skills? our recreational assets? our philosophies of life? How?

On the assumption that we can make changes of these kinds, the course in "individual orientation" will consider not only all of the "what" and "why" questions outlined in the first paragraph, but will deal also with the more fascinating "how" questions which are suggested just above.

For purposes of convenience the materials and problems of this course will be distributed as follows:

The first quarter will deal with the general topic of personality, its nature, components, and possibilities of change and includes also personal health and its maintenance.

The second quarter will deal with sociability, social relationships with others, social skills, leisure time, and recreation.

The third quarter will deal with the development of a personally satisfying philosophy of life and questions of religion, morals, and ethics. Enrolment limited.

7f-8w-9s MW IV, 206WeH; 7w-8s TTh VII, 206WeH. General College faculty. Mr. Thornton, co-ordinator.

HOME LIFE ORIENTATION

These three courses, comprising a total of six hours during the year, are the core of the comprehensive examination in home life orientation. In addition, each student according to his needs and interests should elect, with the assistance of a program adviser, six or nine hours or even more of course work which will contribute to his home life orientation. Courses may have value for home life orientation for one student and not for another. Among those of the most general value for students are:

Biological Science Studies:

The Human Body in Operation in Health and Disease

Ethetics Studies:

Food Selection and Purchase

Clothing Selection, Purchase, and Care

Selecting and Maintaining a Home

Human Development and Personal Adjustment

Income Management, Individual and Household Buying

General Arts Studies:

Art Today

Home Landscaping and Gardening

Physical Science Studies:

The Nature of Chemistry

Social Science Studies:

Problems of Consumption Economics

The Family

Home and home life have been taken more or less for granted by many people. That small children need the protection of the home has been rather generally recognized. That home life is an important factor in individual satisfaction, in job success, and in social responsibility throughout life has been less generally recognized. All youth studies of the past few years point to the desire of young people not only to establish homes but that home life be successful and satisfying, that they do a better job of homemaking and home living than have their elders. For these reasons, among others, special courses dealing with problems of home living have been developed.

G.C.23f,s—Fall and spring quarters. THE HOME IN PRESENT SOCIETY. (A home life orientation course.)

This unit will deal with certain basic questions in regard to homes and home life. What does the home mean to people just as individuals? Are there unique

values inherent in family life for every age level? What is its influence in forming attitudes, prejudices, and beliefs? What is the relationship between the job and home life—the pressure of the family for jobs having social prestige or the making of more money? How does life within the home influence job success or failure? What is the relationship between a job and home life—the hours of work, leisure time, place of living, social status? What is the effect on home life of changing social conditions—women gainfully employed, youth unable to get jobs, incomes insufficient to maintain a comfort level, decreasing size of the family, greater mobility in population? What is society's stake in homes and home life? What is the relationship of poor housing and poor home conditions to delinquency and crime? How must people work together for protecting health, providing recreation, maintaining standards of food, clothing, and housing? What are the laws which concern marriage, divorce, protection of children, which govern property of husbands and wives? Enrolment limited. Fall TTh III, 206WeH; spring TTh II, 206WeH. General College faculty. Miss Haas, co-ordinator.

G.C.24w—Winter quarter. MAINTENANCE ASPECTS OF FAMILY LIFE. (A home life orientation course.)

The maintenance aspects of home living will be considered in this quarter. Many questions need to be considered in relationship to financing a family. What are families earning today? At what income levels are most families to be found? What will these incomes buy and what do they buy? How much does it take to run a home? What problems arise in regard to spending money? Management and a knowledge of, and skills in, housewifery enter into success in running a home. What is the man's share in this management? What does the family want from housing? How much can they afford to spend? How do the family's needs fit into community needs? At what points must they co-operate? How shall the health of the family be protected? What is the responsibility of the home in building attitudes concerning health? How may time apart from the job be used in home and family living, in creative activities, in individual and family recreation within and without the home? Enrolment limited. TTh III, 206WeH. General College faculty. Miss Haas, co-ordinator.

G.C.25s—Spring quarter. HUMAN RELATIONSHIPS AND FAMILY LIFE. (A home life orientation course.)

The college student is usually still a member of his parents' family. He is also thinking of family life for the future. This unit is concerned with those factors which make for satisfying and dissatisfying home life. At the adolescent age what makes for congenial relationships between parents and children of this age, between siblings? What are the likely points of conflict? What influences the parents' attitude and the children's attitude? What are some of the responsibilities of adults to youth, parents to children during youth? What are the children's responsibilities to their parents? How can young people become responsible, self-directing persons while economically dependent? How can they grow up emotionally in relation to their family, view the family situation with understanding and sympathy, while in the long run accepting responsibility for their own actions? What are the problems of pre-marriage and the early years of marriage? What do friendships with the opposite sex mean? What is the engagement period? What factors make for compatibility and incompatibility between husband and wife? What things should be talked over before marriage? What real values should be expected from the

best kind of marriage partnership and what faults or illusory values should be discouraged? What are the biological aspects of marriage and reproduction? What psychological adjustments need to be made? What should determine the decision to have children? What is the influence of the home on children? What home conditions seem of greatest importance to children and youth? What is the joint responsibility of parents in the rearing of children? What are the general problems of growth and development? Enrolment limited. TTh III, 206WeH. General College faculty. Miss Haas, co-ordinator.

SOCIAL-CIVIC ORIENTATION

Two orientation courses, each comprising a total of six hours during the year, are available in the social-civic orientation area. Only one is to be taken as a core in preparing for the comprehensive examination in this area. In addition to this, each student according to his needs and interests should elect, with the assistance of a program adviser, six or nine hours or even more of course work which will contribute to his social-civic orientation. Courses may have value for social-civic orientation for one student and not for another. Among those of the most general value for students are:

Economics Studies:

- Our Economic Life
 - Problems of Production, Finance, and Credit
 - Problems of Consumption Economics
 - Problems of Government and Business Relations
- Basic Wealth

Sociological Studies:

- Social Trends and Problems
- The Family

History and Government Studies:

- American Citizen and His Government
- Functions and Problems of Government
- International Relations
- Minnesota and the Northwest
 - Pioneer Commonwealth
 - Modern Commonwealth

Other Social Science Studies:

- The Formation of Public Opinion
- Seminar in Social Problems

What is the nature of this swiftly moving society of which we are a part? Is it all confusion, conflict, and chaos? Sometimes it is easy to think so. Manufactured goods and farm produce are unused, while many are hungry and in need. Unemployment and industrial strife continue, the crime rate increases, and wars and rumors of war are ever present. It is difficult, under these circumstances, to believe that "all's right with the world." Yet more of the good things of life are available to the common man than ever before. The resources of the world are at our doorstep. Comfortable homes, a varied diet, cars, good schools, excellent medical facilities, music, art, magazines, good books and scientific advance are taken for granted by many of us. Which of these is the true picture of our society? Both are, of course. Both are part of the pattern of the present social world. That pattern is very complex, for there is even more to it than the two aspects mentioned here. Because we as individuals are members of this society, and, whether we like it or not, are going to be affected by what goes on in it—and, in turn, are going to affect others by what we do—it is up to us to try to understand it.

This is the purpose of Current History and Contemporary Society, the two orientation courses in social-civic affairs. They are designed to describe and interpret the pattern of modern society, so that you, in turn, may better understand your place in it. The two courses are alike in some respects, and different in others. Election of one or the other depends, therefore, on your needs or interests. Each

course will emphasize the "wholeness" of society, that is, the way in which the various parts fit together, but at the same time, will examine those separate parts. Both will explain the ways in which the larger problems studied affect the community and individuals in it. Both will deal with the present, but will not neglect necessary background material. They will also point out some of the ways and means which may be used in meeting the many social problems confronting society today.

G.C.73f-74w-75s—Fall, winter, and spring quarters. CURRENT HISTORY I, II, III. (A social-civic orientation course.)

The student of today is confronted and often confounded by the ever changing scenes in a superdrama of world politics, social and economic change, scientific advancement, and startling new developments in the arts. If he is to function properly as a citizen of the world he must realize himself a part of that drama, must follow it, interpret it. Above all, he must learn to relate today's significant happenings with the introduction provided by the events of yesterday.

Current History, as one of the two core courses in the social-civic area, will endeavor by relating in detail the important news of the day, by interpreting it in the light of much that has gone before, and by keeping the broad outlines of the whole picture always before the student, to encourage and assist the student to play an intelligent rôle in the society of which he finds himself a part. While the news—foreign, governmental, political, economic, social—will be the course's point of departure, much stress will be placed on background material. *Time* magazine will be the text, with the *New York Times*, *Current History*, and the whole field of contemporary journalism providing reference material. Enrolment limited. Sec. 1 TF IV, 206WeH; Sec. 2 TTh VII, 201WeH. General College faculty. Mr. E. C. Wilson, co-ordinator.

G.C.34f,s-35w-36s—Fall, winter, and spring quarters. CONTEMPORARY SOCIETY I, II, III. (A social-civic orientation course.)

This course shares the general characteristics of the social life orientation courses described above. Its special feature is that it will analyze the component parts which together make up that society of which we are a part. It will thus probe deeper into the study of the why's and the wherefore's of man's social relationships than will Current History. For that reason, it should be elected only by those students who have an adequate background in history, economics, government, or sociology, or are admittedly interested in the field of the social sciences. Contemporary Society is a sequence course, and students electing it are expected to continue in it throughout the year. Because of its content and method of treatment, new students will not be admitted to the course in the winter quarter. A second sequence will begin in the spring quarter.

G.C.34f,s—Fall quarter. CONTEMPORARY SOCIETY I. (A social-civic orientation course.)

This quarter opens with a brief study of the composition of the American population and its natural environment. The greater part of the quarter will be devoted to an analysis of business enterprise as a factor in contemporary society. In line with the purpose of orientation courses, the treatment will be broad, including the interplay of social and political forces with the economic. We start with business enterprise because it is largely the medium through which technology, the most

significant aspect of modern civilization, has been brought to the general public. The present set-up of business enterprise will be viewed with emphasis on financial and industrial organizations of national and international scope, that is on "Big Business." The following matters are to be included in the analysis: historical, economic, political, and social factors contributing to the rise of large units; the implication of technological advance, mass production, specialization, advertising, labor organizations, etc., on society; conflicting theories concerning the scope of business enterprise. The quarter's study concludes with a discussion of some of the problems incident to the methods by which people in the contemporary world seek to make a living: urbanization, technological and human obsolescence, the consumer, labor, etc. Throughout the quarter, as well as in those succeeding, continual reference will be made to current and local manifestations of the problems treated. Enrolment limited. G.C.34f, MW II, 206WeH; G.C.34s, MW III, 206WeH. General College faculty. Miss Ylvisaker, co-ordinator.

G.C.35w—Winter quarter. CONTEMPORARY SOCIETY II. (A socio-civic orientation course.)

The analysis of contemporary society continues in the second quarter with the study of social and cultural institutions, activities, and problems. In the main, emphasis is to be on the life of the American people when not on the job, the reference of necessity must constantly be made to the material already covered. In what kind of homes do the American people live? How do they amuse themselves? What institutions safeguard their health? What is the state of the arts? What institutions and activities exist for their spiritual and cultural satisfaction? What of education? The investigation of these and similar questions makes up the analysis. Here, as in the fall quarter, actual institutions and group activities are to be treated. Likewise the impact of world forces on the community and nation cannot be neglected. A complex of problems occurring in the sphere of social and cultural relationships is ever present, demonstrating anew the interdependence between social problems and the economic order. Enrolment limited. MW II, 206WeH. General College faculty. Miss Ylvisaker, co-ordinator.

G.C.36s—Spring quarter. CONTEMPORARY SOCIETY III. (A social-civic orientation course.)

The analysis of society moves on to that of the place of government in society—the major consideration of the third quarter's study. The analysis is to be closely related to that preceding it, because it is to government that more and more people are looking for assistance in the solution of their economic and social problems. A study will be made to determine to what extent the increase of governmental functions and agencies has arisen as a result of the government's taking over obligations formerly assumed by the family and community. The question of how far it is wise to have government go in this direction will be raised. To assist in clarifying this point, the democratic way will be compared with that of the great European dictatorships, wherein government has invaded every sphere of life. The emphasis here is to be on the way dictatorships affect the daily lives of the people. The course concludes with a study of nationalism, a vital factor in contemporary society. On one hand, nationalism is a contradictory force, denying the interdependence of society; on the other, it is closely related to all the institutions, processes, and problems already analyzed. Economic warfare, repressions of minority groups, etc.—all part of nationalism—have a direct bearing on the indi-

vidual and the community. Thus, the course commences and concludes with the American people, their daily lives and problems. Enrolment limited. MW II, 206WeH. General College faculty. Miss Ylvisaker, co-ordinator.

VOCATIONAL ORIENTATION

These three courses comprising a total of six hours during the year are the core of the comprehensive examination in vocational orientation. In addition, each student according to his needs and interests should elect, with the assistance of a program adviser, six or nine hours or even more of course work which will contribute to his vocational orientation. Courses may have this value for one student and not for another. Among those of more general value for students are:

Euthenics Studies:

Food Selection and Purchase
Clothing Selection, Purchase, and Care
Selecting and Maintaining a Home
Renting, Buying, or Building a Home
Human Development and Personal Adjustment

General Arts Studies:

Art Today
Music Today
Film and Drama
Home Landscaping and Gardening

Social Science Studies:

Functions and Problems of Government
Problems of Production, Finance, and Credit
Basic Wealth

Literature, Speech, and Writing Studies:

Oral Communication
Writing Laboratory

Physical Science Studies:

Sound, Astronomy, and Technology

Psychology Studies:

Practical Applications of Psychology

One of the major areas of student interests and needs has to do with the choice of an occupation and with adjustment to the world of work. A considerable number of students enter college with no definite occupational choice in mind and drift along depending upon some chance circumstance to determine their life work. Others enter college with erroneous beliefs regarding the choice of an occupation. In one way or another their interest has become firmly fixed upon some vocation and they struggle blindly toward their goal without adequate knowledge concerning their own abilities, fundamental interests, or the demands which their chosen work would make upon them. Under such circumstances the student may fail to survive the course of training which is prerequisite to entrance into his chosen occupation, or, succeeding in passing the course of formal training, he may find himself in an occupation for which he has little liking. A third possibility of failure also exists. The student may succeed in acquiring the necessary formal training and get into an occupation which suits his interests, and yet fail wholly or in part through inability to get along with his fellow workers. Investigations show that problems of personality are among the most frequent causes of vocational failure.

G.C.134f,w-135w,s-136s--Fall, winter, and spring quarters. VOCATIONAL ORIENTATION I, II, III.

Daydreaming and wishful thinking provide a poor basis for the choice of an occupation. It is one of the primary aims of Vocational Orientation to show the student how he can make an intelligent selection of his life work. He is taught what pitfalls are to be avoided and how his interests and abilities should be estimated. He is given information about the requirements and conditions of work existing in different occupations. He is also given a broad survey of the world

of work so that his choice may be based upon a knowledge of many vocations rather than the few he happens to know about.

Vocational orientation does not confine itself, however, simply to the choice of an occupation. In an age of specialization narrow interests and ignorance can produce an utter lack of sympathy and appreciation on the part of those engaged in one occupation for the problems and contributions of those engaged in other occupations. It is therefore one of the major aims of this course to broaden the student's outlook, to increase his understanding of the whole world of work, and to help him realize and appreciate fully the interdependence of all workers and the worthwhileness and dignity of all socially useful occupations whether they be professional or nonprofessional in nature.

The intelligent choice of an occupation can contribute much to a happy adjustment in vocational life. But beyond that is the important matter of getting along with other people and realizing fully the significance of one's place in the industrial and economic scheme. It is a third major purpose of Vocational Orientation to assist the student in making a happy personal adjustment to his work and his fellow workers.

G.C.134f,w—Fall and winter quarters. VOCATIONAL ORIENTATION I.

How to choose an occupation; pitfalls to be avoided. Enrolment limited. Fall MW VII, 206WeH; winter TTh I, 206 WeH. General College faculty. Mr. Hahn, co-ordinator.

G.C.135w,s—Winter and spring quarters. VOCATIONAL ORIENTATION II.

The world of work; interdependence of workers. Enrolment limited. Winter MW VII, 206 WeH; spring TTh I, 206WeH. General College faculty. Mr. Hahn, co-ordinator.

G.C.136s—Spring quarter. VOCATIONAL ORIENTATION III.

Personal values in work; getting along with fellow workers. Enrolment limited. MW VII 206WeH. General College faculty. Mr. Hahn, co-ordinator.

EUTHENICS STUDIES

The Euthenics courses may be elected as a part of the comprehensive areas in Individual, Home Life, and Vocational Orientation, pages 26-29, 32-33. Certain of these courses may be elected in connection with General Arts courses in the General Arts comprehensive.

A Euthenics comprehensive is also available for those students entering in the fall of 1938 who, after completing the Home Life Orientation comprehensive, wish a second one in a related area. The Euthenics comprehensive remains available to students who entered previous to the fall of 1938, provided they have not already taken it. By special permission those students who have a special interest in this area can take a second comprehensive in 1938-39.

Euthenics is "the science and art of improving the human race by securing the best external influences and environmental conditions for the physical, mental, and moral development of the individual and for the maintenance of his health and

vigor." It is a field which may be profitably studied by both men and women. The units outlined here are designed for both.

Certain units deal with maintenance aspects of home life—food, clothing, the dwelling, and the care of the sick. Others deal more directly with social and economic problems—the family as a social unit, individual development through childhood and adolescence, business relationships, income management, individual and household buying.

G.C.10s—Spring quarter. **FOOD SELECTION AND PURCHASE.**

This unit is concerned with the everyday problems of food selection and purchase. Individual problems of securing adequate and satisfying food on a moderate or restricted budget will receive major consideration. This will include a study of diet, normal body growth, factors which influence individual requirements, and the nutritive value of different foods. Food selection in the restaurant and the boarding house, meal planning in the home, and common marketing problems will be discussed. The effect of different methods of food preparation upon nutritional and esthetic values, good manners, and social aspects of eating will be presented. Food fads, fallacies, faulty advertising, food and abnormal body conditions, and certain of the larger social problems involved in feeding people will receive attention. Enrolment limited. MWF VI, 206WeH. Miss Hunt.

G.C.11w—Winter quarter. **CLOTHING SELECTION, PURCHASE, AND CARE.**

Problems involved in being suitably and well dressed as they apply to both men's and women's clothes will be the basis of the course. A study of clothes in general and in relation to oneself, the individual ensemble, the wardrobe as a whole, the cost of clothes, and the ways in which different people meet the various problems will be given consideration. The importance of applying knowledge about clothes to planning and purchasing and the false assumption that satisfaction in clothes is only to be secured by a large expenditure of money will be emphasized. The study of the wardrobe as a whole will be concerned with the basic principles for determining kinds and numbers of garments needed, the place of money in being well dressed, and color planning over a period of years. A study will be made of simple methods of fiber identification, finishing processes, and methods of construction affecting the appearance and performance of a fabric, and the importance of proper care of clothing based on a knowledge of essential fabric information. Attention will be given to sources of reliable information, judging the value of labels and advertising as buying aids, differences in quality of fabric or garment which may be affected by the fiber or type of yarn used, method of fabric construction, method of obtaining fabric design, finishing processes, and differences in workmanship in ready-to-wear garments. Enrolment limited. MTWF VI, 206WeH. Miss Ludwig.

G.C.13f—Fall quarter. **SELECTING AND MAINTAINING A HOME.**

The selection and care of a living place and its furnishings will be the basis of this unit. Discussion will begin with the satisfactions desired from a home, varying needs of individuals and families, major considerations in setting standards for living arrangements, and a study of house plans to meet these conditions. Attention will be given to house design from an artistic standpoint—American houses today and the styles from which they are derived, the style of the house

in relation to the owner and neighborhood, and standards for judging the design and color of a house. The study of furnishing the home will include utilitarian needs to be met, securing attractiveness within the home, cost of furnishing a home, and buying furniture and furnishings. Discussions of care will be concerned largely with general principles and care in relation to making decisions in regard to purchasing furniture and furnishings and in finishes for walls and woodwork. Community problems affecting comfort in living will also be considered. Enrolment limited. MWF VI, 206WeH. Miss Vetta Goldstein.

G.C.15w—Winter quarter. RENTING, BUYING, OR BUILDING A HOME.

This unit is designed to present some of the problems of the individual in regard to housing. Studies will be made of the ways people reach a decision in regard to whether to rent, buy, or build, and the ways they select a neighborhood in which to live. Attention will be given through a study of house plans to suitability of space and arrangement in meeting individual needs. Points to consider in renting will be presented. Problems in buying a home—examining the plan, the construction of the building, title to property, and business aspects—will be considered. Planning for construction, new developments in building, construction processes, landscaping, and community problems in housing will be studied. Enrolment limited. MW III, 206WeH. Mr. Robert T. Jones.

G.C.17w-18s—Winter and spring quarters. HUMAN DEVELOPMENT AND PERSONAL ADJUSTMENT.

Each individual will spend a major portion of his life in adjusting to others. His effectiveness and happiness will depend in large part upon his personal social relations. It is important, then, that he have insight not only into his own mental and social life, but also into that of his companions and associates. To understand oneself and others, one should know something of the road which all travel in reaching maturity and something of the avoidance, by the cultivation of effective attitudes and sound personal relations, of its pitfalls and dangers. In recent years much has been learned of the development of normal and of maladjusted individuals, of the causes of delinquency and insanity, of the nature of mental peculiarities, and of the basic principles of mental hygiene. Such knowledge has come from the study of children and adolescents, of family and home life, and of personal and social adjustment in the practical world of affairs. It is the aim of this course to bring to the student such knowledge of himself and of others as will assist him in meeting his own life problems, in gaining insight into the motives and behavior of others, and in undertaking the responsibilities of family life.

G.C.17w—Winter quarter. HUMAN DEVELOPMENT.

In order to understand ourselves and others, some knowledge of the developmental course all humans follow is necessary. Much of what we are and how we feel and act can only be understood in terms of our earlier experiences and of our childhood. Hence, this portion of the course presents a general outline of childhood and adolescence by surveying physical growth, learning, and development of motor, linguistic, intellectual, and social skills, emotional life and adjustment, etc. While the normal course of development is stressed, behavior difficulties are also given some attention. MWF III, 101WeH. Mr. Anderson, Mr. Griffiths.

G.C.18s—Spring quarter. PERSONAL ADJUSTMENT.

Building upon the groundwork of the first quarter, this section of the course deals with the problems facing adolescents and young people in their personal and social relations. One purpose of the course is to show that the presence of conflicts and difficulties is not unique but universal. The origin and nature of attitudes and complexes is pointed out and the relation of attitudes and conflicts to social pressures analyzed. Emphasis is given to effective adjustment as well as maladjustment. Principles of mental hygiene are stressed. In the latter half of the quarter especial attention is given problems of marriage and family life in order to lead the student to understand the behavior of himself and his associates and to reflect on his coming responsibilities. MWF III, 101WeH. Mr. Anderson, Mr. Griffiths.

G.C.21s—Spring quarter. INCOME MANAGEMENT, INDIVIDUAL AND HOUSEHOLD BUYING.

The financial policy of the individual and the family, needs which must be met by the money income, personal and family budgeting, and record keeping will be studied. General problems of consumer buying, characteristics of a satisfactory market from the standpoint of the buyer, advantages and disadvantages of different types of retail stores, and judging the quality of goods will be discussed. Consideration will also be given to the influence of advertising on consumer selection, the meaning and value of labels, guarantees, seals, and stamps of approval. Sources of consumer information will be evaluated. Attention will be given to problems arising from an increasingly highly organized market less intimately concerned with individual needs or connected with the individual buyer, and an increasing display of goods and brands accompanied by high pressure salesmanship and advertising. The interrelationship between family well-being and careful consumption in the home and the interdependence of family consumption and national economy will also be studied. Enrolment limited. TTh VI. 206WeH. Miss Kafka.

GENERAL ARTS STUDIES

The General Arts comprehensive has Art Today as its basic course for 1938-39. Two additional groups to complete the comprehensive area are to be selected from the following: Music Today; Film and Drama; Literature Today; Clothing Selection, Purchase, and Care; Selecting and Maintaining a Home; Renting, Buying, or Building a Home; Home Landscaping and Gardening.*

In addition, the courses in this area may be elected in the orientation comprehensives, pp. 26-33. These will have varying degrees of interest and value to students for this purpose. For example, all the General Arts courses have value in Individual Orientation; Courses 119 and 120 will be useful to some in connection with Home Life Orientation; Courses 119, 122, and 127 may be of special interest to others in Vocational Orientation.

The arts cover many fields of activity. For example, have you ever wondered why modern houses are built as they are, why modern painting differs from the "Old Masters"? Or, in listening to the radio, have you wondered why so much attention is given to Toscanini, or who Beethoven and Wagner are? Is "swing

*A basic course in General Arts will be offered in 1939-40.

music" something new, or has there ever been anything like it before? In the movie theater you may wonder why the actors and actresses perform as they do. When you read newspaper or magazine accounts of the movies, you may wonder why you do not agree with the critics.

It is the aim of the General Arts Studies to give you a better understanding and deeper enjoyment of three important fields of human activity; Art Today deals with the architecture, industrial arts, painting, and sculpture of the present and past; Music Today presents some of the most significant and interesting music from all periods; and Film and Drama brings to your attention some of the important factors in the movies and legitimate theater. In all courses actual contact with art, music, and movies is stressed, *but you do not need artistic ability to elect these courses.*

G.C.119f†-120w†-121s†—Fall, winter, and spring quarters. ART TODAY.

Have you ever wondered why the buildings in the Twin Cities were designed as they were? Or have you wondered what different styles of architecture are represented on the campus, for example, by Pillsbury Hall, the Y.M.C.A., and Burton Hall? Have you ever been in the Minneapolis Institute of Arts or the Walker Art Gallery? Do you know that both of these museums hold important works of art from many ages and countries? Would you like to know more about the exhibitions which are held in the University Gallery? Do you understand modern painting, contemporary architecture, experimental sculpture? Can you distinguish well-designed furniture, glassware, dishes, etc. from poorly designed wares, both of which are displayed in the local stores? These are a few of the problems with which Art Today will deal.

This course is an introduction to the plastic arts—painting and the graphic processes, sculpture, architecture, and the allied arts. You do not have to know anything about art, nor are you expected to have any special art ability, in order to elect this course. The course is planned to give you a basic understanding of fundamental art principles, to give you opportunities to see and touch works of art, and, thereby, to deepen and widen your appreciation.

The work in Art Today may be done either through lectures and discussions, or lectures and participation with materials in the art laboratory. The art laboratory, with its variety of materials and equipment, offers opportunities for individualized work. No special ability is necessary for work in the laboratory. Two types of sections are maintained in this course in order to permit students to supplement the lectures with either laboratory work or discussions. Approximately the same materials will be covered in each section. Enrolment in each section limited to twenty-five students.

G.C.119f†—Fall quarter. ART TODAY.

Has it ever occurred to you that the Twin Cities are literally full of art objects of every kind and description? Some are excellent, some are mediocre, some are poor. Have you any basis for distinguishing one from the other? Have you really looked at most of them? In the fall quarter the course will give a general survey of art products and practices. Paintings, houses, chairs, automobiles, etc. will be studied as a basis for learning more about lines, forms, colors, texture, and space—elements which are found in all art objects. This work should solve such prob-

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

lems as these: choosing a color scheme for your own room; developing your sensitivity to color in painting; sharpening your ability to discriminate between good and poor forms in architecture. The fundamentals of design—balance, rhythm, dominance, and subordination—will be illustrated in a wide variety of art objects to demonstrate why some lamps, stoves, paintings, etc. are more pleasing than others. Then, too, such modern art objects as streamlined automobiles and skyscrapers will be studied as examples of forms which closely follow their functions. Can you think of any historic art objects which also demonstrate this principle? During the course, you will see many for “form follows function” has always been a fundamental of great art. Mr. Faulkner, Miss Fisher, and other members of the university art staff.

Sec. 1	Lecture	TTh	I	Botany Auditorium
	Laboratory	TTh	VI-VII	301 Wesbrook Hall
2	Lecture	TTh	I	Botany Auditorium
	Laboratory	WF	III-IV	301 Wesbrook Hall
3	Lecture	TTh	I	Botany Auditorium
	Discussion	TTh	II-III	306 Wesbrook Hall
4	Lecture	TTh	I	Botany Auditorium
	Discussion	WF	III-IV	306 Wesbrook Hall

G.C.120w‡—Winter quarter. ART TODAY.

Painting and sculpture in the Twin Cities will form the basic content of the work in the winter quarter. Do you know, for example, the different ways of applying oil paint to canvas, water color to paper? Have you ever seen a Chinese water color, and compared it with one by John Marin? Do you know how the Cubists, Impressionists, and American Scene painters differ? Can you recognize an etching when you see it? A drypoint, or lithograph? Have you seen the magnificent statue by Carl Milles in the St. Paul Courthouse? Why is it superior to the statue in the Minneapolis City Hall? How many bas-reliefs have you seen? When you see architectural sculpture, do you know what to look for? In what ways are painting and sculpture similar, in what ways different? These are a few of the issues which will be analyzed and discussed during the winter quarter. Schedule same as for G.C.119f. Mr. Faulkner, Miss Fisher, and other members of the university art staff.

G.C.121s‡—Spring quarter. ART TODAY.

The architecture and industrial arts of the Twin Cities will be emphasized during the spring quarter. How many buildings in the Twin Cities can you identify? How many styles of architecture can you recognize along Nicollet Avenue? Why are there so many styles on one street? How does modern architecture differ from historic work? Is it any better? Is the modern house a fad which will be forgotten in a few years? How does the phrase, “form follows function,” apply to architecture? And how does it apply to industrial arts—furniture, automobiles, knives, and forks? Are handmade products superior to those produced on the machine? How does contemporary glass compare with the glass on display at the Minneapolis Institute of Arts? Have you ever enjoyed the Oriental pottery in the Walker Art Gallery? If you have not, and if you cannot discuss the questions above, this course should be useful as part of a general education. Schedule same as for G.C.119f. Mr. Faulkner, Miss Fisher, and other members of the university art staff.

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

G.C.122†—Fall quarter. MUSIC TODAY.

Music Today is a panorama ranging from the simple folk song to the most expressive symphony. Ancient dance forms, modern dance rhythms, current musical shows, nineteenth century symphonic literature, tremendous operas, operas frivolous in shape and sound, art songs, ballads, symphonic poems, compositions for solo instruments and instruments in various compositions—this is the music heard today in concert halls, over the air, and on phonographs. They all have in common the fact that they are made from the same materials, are first written, then performed, and then heard. These considerations come up for analysis and illustration in the fall quarter. What is music made from? What is music? What are its limitations, possibilities, future? *No musical ability is required for this course.* MW VII-VIII, 306AWeH. Mr. Hill.

G.C.123w‡—Winter quarter. MUSIC TODAY.

During the winter quarter attention is given to the men who make music—the human element. Did Gershwin's early boyhood in New York and later experience on Tin Pan Alley have any effect on his Negro opera "Porgy and Bess"? Did the fact that Beethoven, himself a poor man, forced into the company of eighteenth and nineteenth century aristocracy, have any recognizable overtones in, say, his Fifth Symphony? Is Slavic music different from Spanish music? Why? Briefly, the winter quarter approaches the music heard today in the light of the people who write it, play it, listen to it. *No musical ability is required for this course.* MW VII-VIII, 306AWeH. Mr. Hill.

G.C.124s‡—Spring quarter. MUSIC TODAY.

Throughout the entire year, the radio programs and local concerts are carefully observed. By spring most people have developed the habit of listening so that the considerations of the fall quarter can again be taken up, this time in more vivid detail. Also, during this quarter, the music of the theater, such as operatic music, movie music, incidental dramatic music, becomes important. Several operas are investigated and heard completely—not as a long succession of pretty tunes or the unraveling of a plot, but as powerful human expressions. Finally, there is opportunity to look again at the creator's side of the picture, to learn his problems but only in so far as they affect the listener. *No musical ability is required for this course.* MW VII-VIII, 306AWeH. Mr. Hill.

G.C.125s—Spring quarter. PIANO PLAYING FOR PLEASURE.

It is easy to play the piano. Within a quarter's time enough knowledge of the art may be gained so that one may enjoy playing the piano for one's own pleasure. The course will be conducted in small groups, open to all and no previous musical training of any kind is necessary. Hour and room to be arranged. Mrs. Twitchell.

G.C.127w‡-168s‡—Winter and spring quarters. FILM AND DRAMA.

Eighty million persons go weekly to the movies. A good many more million persons visit playhouses for other types of theatrical entertainment. New York and the whole United States and the world in general give audience to the theater in its various vital forms. Yet the movies are by far the greatest type of

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

mass entertainment the world has ever known; and it is high time we consider them in relation to the current world, in relation to the theater in general, to drama in particular, and to the people who see them. Today they are the most easily available and the most typical form of dramatic art.

Film and Drama approaches the theater problem from the point of view of the film audience, realizing the extent of the strong social and personal influences upon this vast movie audience, with the hope that more aware, more responsible, more appreciative, and consequently more demanding audiences can and should be developed.

Film and Drama is a course in the appreciation of the film, with constant reference to other theatrical forms, especially the drama. Merely to discuss these matters in terms of random viewing of films shown in local movie houses is not enough; Film and Drama, consequently, builds around (1) a series of film projections and (2) discussion before, during, and after these showings. When important plays appear on the campus or in one of the Twin City theaters, those performances are discussed; when allied forms of ballet, opera, etc. are performed, they, likewise, are introduced in discussion. The point of view is always the theater as a whole, with film as the focus.

The first quarter introduces the narrative feature film and shows various examples of this dominant type as it is developed here in the United States and abroad. Many matters are discussed and stressed in lectures: the emotional response to the film as a whole, the elements of good photography, directorial techniques, the use of music, the principles of pictorial design as film works them out.

The second quarter considers more technical matters, but still adheres strictly to the point of view of the audience rather than of the technician. Several programs from the Film Library of the Museum of Modern Art will be shown to illustrate (1) some general steps in the history of narrative films, (2) the talkies in their early stages, (3) the characteristic silent film of the late silent film period—the 1920's. Several weeks will be given over to demonstrating the ways in which the social point of view works into the film; in this connection, the documentary film, the propaganda film, and the feature length film with a social theme will illustrate the problem. Other films of the noncommercial type and of the less-than-feature length type will be shown: the color film of Disney—contrasted with poorer examples of color cartoons, the newsreel, the advance guard films pointing ways to the film of the future.

Throughout the two quarters questions will arise: What, in general, are the sources of pleasure in the theater? Is the theater building a good one for its purpose? What are the rôles of actor, designer, playwright, scenarist, producer? How does the theater consider the concepts of realism and artifice? What rôles do life and escape from life play in the theater? And last and most important, how and to what extent do theatrical entertainments draw upon contemporary economics, sociology, and psychology for their materials and methods? Mr. Faulkner, Mr. Kissack, Mr. Hill, Mr. Weaver.

Sec. 1	VIII-IX	T	Music Auditorium
	VI	Th	306 Westbrook Hall
2	VIII-IX	T	Music Auditorium
	VIII	Th	306 Westbrook Hall

HUMAN DEVELOPMENT STUDIES

The courses listed below may be elected as a part of the comprehensive areas in Individual and Home Life Orientation, pages 26-29. They may also be combined with Human Development and Personal Adjustment for a Human Development comprehensive.

G.C.101f-102w-103s—Fall, winter, and spring quarters. HUMAN BIOLOGY I, II, III.

There is a fundamental difference between living and nonliving matter. Everything that is known of differences between living and nonliving—the forms of life, the theories and laws of life, the causes and effects of life—is biology. That part of biology which relates to man is human biology.

Biology, because of its close association to man in so many phases of his everyday life, is by its nature intensely interesting and also broadly practical. When the study of general biology is intimately linked with a man's quest for health, the subject is particularly interesting and practical. This intimate linkage carrying through to study of minimum essentials in human body structure, physiology, hygiene, and disease is maintained throughout the course in Human Biology.

Aside from its practical assistance to right mental and physical living, the study of biology is practical to agriculture, horticulture, animal and plant husbandry, game conservation, lumbering, etc. Efforts to improve animals and plants can be successful only in so far as they take advantage of natural biological laws. Such applications to man we ordinarily recognize as the art and science of medicine in its broadest ramifications—all the efforts of doctor, dentist, public health specialist, nurse, hygienist, laboratory worker are efforts to understand and apply accurately biological principles. The preservation of health, the proper rearing of children, the feeding of a nation, technological unemployment—in fact, the entire basis of rational adjustments between man and his environment—involve applications of fundamental biological laws.

The general plan of the course is to present, during the fall quarter, fundamental laws of life as seen in the animal and plant kingdom, to continue in the winter quarter with a study of human body structure and physiology, and in the spring quarter to give attention to everyday problems in the maintenance of health. Practical application of biological information is cited throughout the course—economic relationships, eugenics, etc. Thus, while the spring quarter is devoted mainly to such material as every person should know for maintenance of good mental and physical health and for some understanding of common diseases, of effects of widely used drugs, etc., some material of like import is better introduced earlier in the year. For example, common sex problems of the human are considered in connection with the biology of reproduction, and somewhat later, maternal hygiene, but the study of venereal disease is a part of the work on contagious diseases in the spring quarter. This course offers particular opportunity to show the place of the experimental method.

A student may elect to take this course for one, two, or three quarters, and may enroll at the beginning of any quarter. The period usually given to lecture will be utilized occasionally as a laboratory period where the student will have opportunity to study prepared material. There is no other required laboratory period. Models, charts, lantern slides, motion pictures will be used throughout the year.

G.C.101f—Fall quarter. HUMAN BIOLOGY I: GENERAL BIOLOGICAL CONCEPTS IN RELATION TO MANKIND.

Man's place in nature, discussed from the point of view of the human being. How did man come to be? A short history of his existence, and a comparison of his history with that of other forms of life is included.

While mechanisms may show some differences, man's plant and animal companions adhere to the same fundamental biological laws as he does. While this course is not intended to parallel the usual botany and zoology courses, it aims to give a general overview of the plant and animal groups, to follow through on phases of the advances exhibited by various plants and animals in structure and physiology as a background for further study on man himself. For many pupils, this course will represent their only collegiate study of material ordinarily included in zoology, botany, and physiology. Consideration of minimum essentials pertaining to protoplasm, cells, tissues, and organ types is included. The mechanism of heredity is studied, including the theme of evolution and the development of man himself. Enrolment limited to 250 students. MWF VI, 101WeH. Dr. Potthoff.

G.C.102w—Winter quarter. HUMAN BIOLOGY II: THE HUMAN BODY IN OPERATION.

Many problems arise daily in regard to how the human body operates. Aside from the problems of the fitness of the human group as a whole, body functioning in health and disease is a vitally personal matter. A brief survey of the human body as a whole is first presented. The normal physiology and, where feasible, common abnormal mechanisms, are studied. How one eats, how one works, how one procreates, how one keeps the engine in trim—are all immediate everyday concerns. Various aspects and systems of the human body in operation will be considered, giving enough of underlying laws and principles to explain conditions of health and disease. In connection with the material on the reproductive system and its physiology, the hygiene of maternity is included. These lectures are preceded by several lectures on embryology by Dr. Scammon to give a better understanding of fetal growth. An attempt is made to relate the newer knowledge of foods to physiological processes in a manner relevant to this course. Enrolment limited to 250. MWF VI, 101WeH. Dr. Potthoff.

G.C.103s—Spring quarter. HUMAN BIOLOGY III: THE HUMAN BODY IN HEALTH AND DISEASE.

The aim of the spring quarter is to teach generally accepted ideas of right living habits. What is cancer? How may one protect himself against this disease? Against what diseases do we have good vaccines, antitoxins, drugs? Against what diseases should the infant or the adult be vaccinated? How much sleep is really necessary? Does exercise tend to prolong efficient life? Is smoking harmful? Are there any practical measures one may take to prevent high blood pressure, insanity, colds, worrying? What are the effects of the commonly used drug store cold or headache remedies? What should the mother or the motorist or the athletic coach do at the scene of a serious accident to help the injured?

Avoiding too technical detail, knowledge of such common diseases as asthma, insanity, cancer, diabetes, scarlet fever, syphilis, etc. which will be of value is given. Aspects of heredity of immediate concern, what is known about the inheritance of body stature, appearance, defects, disease are studied. Considerable attention is devoted to mental hygiene. A practical preventive medicine program as far as vaccinations or immunizations applicable to all is discussed. Some time

is devoted to consideration of the various health agencies and to aids in the selection of health advisers. The effects of common drugs, such as nicotine, alcohol, sleep producers, alkalizers, are also discussed. Enrolment limited to 250. MWF VI, 101WeH. Dr. Potthoff.

G.C.17w-18s—Winter and spring quarters. HUMAN DEVELOPMENT AND PERSONAL ADJUSTMENT.

This course, described on pages 35-36, may be elected with Human Biology in preparation for the Human Development comprehensive examination. MWF III, 101WeH. Mr. Anderson, Mr. Griffiths.

LITERATURE, SPEECH, AND WRITING STUDIES

A comprehensive area made up of Literature Today, Writing Laboratory, and Oral Communication may be elected. Literature Today may also be elected with Art Today as a comprehensive area. In addition, single courses may be elected according to the needs and interests of individual students as a part of the comprehensive areas in Individual, Home Life, and Vocational Orientation (see pages 26-29, 32-33).

G.C.55f-56w-57s—Fall, winter, and spring quarters. LITERATURE TODAY.

Literature Today, as the title suggests, will use modern writings for study in the course. The point of view will be that of examining these writings for a reflection of the ideas, institutions, and customs that make up modern civilization. Such an examination should contribute greatly to the student's understanding of the life around him. Many of our present-day ideas and institutions can be understood by studying them directly; some, however, can be best understood by examining the forms from which they grew. The course, therefore, will study older literature whenever an understanding and appreciation of today's literature depend in a great measure upon the older, tho such a study will not be chronological but comparative.

Little attention will be paid to developing speed in reading; rather the emphasis will be placed upon reading fully with great comprehension. Thoughtful, reflective reading will reveal to the student how short stories, plays, essays, novels, and biographies are used to spread propoganda for communism, socialism, capitalism, fascism, and so forth. The course, then, should stimulate the student to read wisely and objectively so that he may find his own answers to problems presented in the literature of today, and not merely conform sheeplike to spectacular, but ephemeral, tendencies of thought which he finds surrounding him.

But the course will have a further aim; it will seek to stimulate the student to express his own experiences to his better understanding of them and to stimulate the student to a greater, pleasurable appreciation of literature so as to furnish a source of never-ending intellectual enjoyment and growth.

G.C.55f—Fall quarter. LITERATURE TODAY.

In the fall quarter, the emphasis in Literature Today will be more upon the problems of reading confronting all of us whether we read road maps, telephone directories, catalogs, or reference books, for information, or whether we read stories, poems, plays, or novels, for pleasure or for widening our experiences. Special attention will be paid to the theme that literature is an interpretation

of life. The materials of the course have been chosen because of their special appeal to students and because of their pertinency to contemporary living. The lectures by the instructor and the reports by students will center in methods of comprehending intelligently and pleasurably what is studied. MWF IV, 201WeH. Mr. Appel.

G.C.56w—Winter quarter. LITERATURE TODAY.

Of the thousands of books published each year only a small number are deserving of serious consideration by the modern reader, but it is difficult to recognize the good from the bad as they come streaming from the presses. In attempting to make an intelligent choice of books even for merely recreational reading one is faced with a real problem. The aim of the winter quarter course is to give help in selecting those contemporary books which may be read with the greatest profit and pleasure. Members of the class will purchase for the course books of their own choice. There will be reports on the reading and discussions. The class will study together short stories and poems appearing in a monthly magazine as well as weekly reviews. Lectures will be devoted to a consideration of the values inherent in the different types of literature and the ideas and techniques characteristic of literature today. MWF IV, 201WeH. Miss Kranhold.

G.C.57s—Spring quarter. LITERATURE TODAY.

It is evident today that literature is not produced in a vacuum. It reaches out, for subject-matter, for themes, for emotional effects, into adjacent art fields, into wider social fields of psychology, sociology, economics, and current history in general. The spring quarter of Literature Today shows how and in what directions recent books use nonliterary materials, not forgetting that literature, regardless of its materials, is an end in itself. Several books touching on art, current history, and sociology will be assigned; students will write reports on these and other readings. MWF IV, 201WeH. Mr. Weaver.

G.C.61f-62w-63s—Fall, winter, and spring quarters. WRITING LABORATORY.

Composition will be taught in the Writing Laboratory from the point of view of the student's current and future needs. Individual conferences and assignments in the Writing Laboratory will be augmented by general lectures and discussions so that each student will become acquainted with the various types of writing and with the procedures best adapted to those types. Special emphasis will be placed upon understanding the functions of language as it is used today, especially in regard to current usage and standards for knowing what is acceptable in speech and writing.

The assignments will be given from time to time, each student will find frequent opportunities for writing, as a part of his work for the course, letters home, business letters, letters of application, and class notes for himself, as well as term papers, book reports, and speeches for other courses. All such writing will be done in the Writing Laboratory which is furnished with suitable chairs and desks and reference books.

Each section meets twice a week for two consecutive hours each time. *Each section is limited to thirty-five students.*

In addition to the hours listed below, the Writing Laboratory will be open at certain hours, as a clinic, for students not registered in the course or in the General

College. An instructor will be in attendance to give help on writing problems. Enrolment limited. Mr. Appel, Mr. Corbett, Miss Kranhold, Mr. Weaver.

Sec. 1	Lecture, discussion	I-II	M	302 Wesbrook Hall
	Laboratory	I-II	W	302 Wesbrook Hall
2	Lecture, discussion	I-II	M	302 Wesbrook Hall
	Laboratory	I-II	F	302 Wesbrook Hall
3	Lecture, discussion	III-IV	M	302 Wesbrook Hall
	Laboratory	III-IV	W	302 Wesbrook Hall
4	Lecture, discussion	III-IV	M	302 Wesbrook Hall
	Laboratory	III-IV	F	302 Wesbrook Hall
5	Lecture, discussion	VI-VII	M	302 Wesbrook Hall
	Laboratory	VI-VII	W	302 Wesbrook Hall
6	Lecture, discussion	VI-VII	M	302 Wesbrook Hall
	Laboratory	VI-VII	F	302 Wesbrook Hall
7	Lecture, discussion	I-II	T	302 Wesbrook Hall
	Laboratory	I-II	Th	302 Wesbrook Hall
8	Lecture, discussion	VI-VII	T	302 Wesbrook Hall
	Laboratory	VI-VII	Th	302 Wesbrook Hall
	Clinic hours	III-IV	T	302 Wesbrook Hall
		III	Th	302 Wesbrook Hall

G.C.67f-68w-69s—Fall, winter, and spring quarters. IMAGINATIVE WRITING.
(Not offered in 1938-39.)

This course is limited to fifteen students. Only those students who show marked ability and are recommended by the counselors or the instructors in the laboratory will be admitted. Here is an opportunity for a limited number of students to follow their special interests. The work will be done entirely in individual conferences with the students, the class period being only for the reading of papers and the criticism of them by the class. Each student will decide for himself the type of writing he wishes to do and set himself special problems. Students may elect this course for two to ten hours. Conferences will be arranged.

G.C.70f-71w-72s‡—Fall, winter, and spring quarters. ORAL COMMUNICATION.

This course is offered for students who wish training and experience in informal speaking, i.e., discussion, recitation, conversation, conference, and interview. Particular attention is paid to basic speech habits such as vocal patterns, posture, clearness of statement, and social adjustment. Individual instruction is stressed, and the class time is devoted almost entirely to drill and practice. Altho the course is not primarily adapted to the needs of individuals seeking special training in acting, interpretation of literature, and oratory, it does provide an approach to such special activities through the improvement of basic speech habits.

Through the co-operation of the Visual Education Department each student is given an opportunity to make two voice recordings per quarter, and moving pictures will be taken of those students remaining in the course during the fall, winter, and spring quarters. Enrolment limited. Mr. Gilkinson and assistant.

Sec. 1	I	TTh	306A Wesbrook Hall
2	II	TTh	306A Wesbrook Hall
3	VII	TTh	306A Wesbrook Hall

‡ A fee of \$1.50 per quarter is charged to defray the cost of voice recordings, voice record play-back, and moving pictures.

PHYSICAL SCIENCE STUDIES

Certain courses in the Physical Science Studies may be elected as a part of the comprehensive areas in Home Life and Vocational Orientation, pages 27-29, 32-33. A comprehensive in the Physical Science Studies is also available for those students who wish to elect it.

G.C.88f—Fall quarter. ENERGY AND MATTER.

Fundamental physical concepts, nature of gases, liquids and solids, forces and motion, heat, electricity and magnetism, light.

When we look at the complex world about us and see its magical phenomena we take it all for granted unless our curiosity leads us to ask why the sky is blue and sunset red, how the household refrigerator works, why some of us wear glasses, what causes dew, fog, clouds, hail, and rain, what is sound, why do we have winter and summer, how does the thermostat control room temperature. More remarkable is the fact that everything in the universe is built up of only 92 different kinds of atoms, these in turn being built up entirely of electrons, protons, and neutrons. In other words all physical properties are functions of the properties of electrons, protons, and neutrons, or groups of electrons, protons, and neutrons. With matter is always associated the phenomenon we call energy. Here is the most fascinating study outside of life itself and no student is so intellectually stagnant that he has never searched nor asked for an explanation of some physical phenomenon. No matter what one's position in life may be, a knowledge of scientific method, an appreciation of scientific philosophy, and a scientific attitude towards all things is necessary for the mentally well-balanced man.

The main topics for study will be the fundamental physical concepts such as energy, matter, and time; the laws of energy and motion explained in simple mathematical language, heat and molecular motion, electricity and magnetism, and how matter emits the radiation we know as light. Enrolment limited to 200. MTWThF I, 166Phys. Mr. Vaughan.

G.C.89w—Winter quarter. THE NATURE OF CHEMISTRY.

The material objects which we now regard as necessities have increased and changed so remarkably during the past thirty years through the development of the science of chemistry as to be almost unbelievable. This science has raised the standard of living, has given beauty and usefulness to our homes and the clothes we wear, has provided new weapons in man's fight against disease, has given us the means to refertilize our rapidly wearing out land, has given us new and interesting materials for all purposes. To show how these effects have been brought about is our objective.

The lecture topics for study will be the development of the fundamental concepts of chemistry, why and how chemical changes take place—such as oxidation and reduction; the chemistry of foods, dyes, lumber, straw, clothing materials, explosives, photographic film, and other materials. MTWThF I, 166Phys. Mr. Vaughan and others.

G.C.90s—Spring quarter. SOUND, ASTRONOMY, AND TECHNOLOGY.

This quarter's work in the study of physical science will be divided into three main sections: sound, astronomy, and technology.

The production, transmission, and reception of sound, together with the design of auditoriums and classrooms for better acoustical properties, will be considered in the first of these divisions.

Three weeks will be devoted to work in the field of astronomy, the lectures being designed to acquaint the students with the principal features of the heavens, to make them aware of the fact that the earth and even our solar system are not alone in space, and to give them a better realization of the place of man in the material cosmos.

The third part will consist of a series of lectures concerning the technological applications of physics and chemistry in manufacturing, building, transportation, communication, and how the engineer and architect utilize and apply the principles of the basic sciences of mathematics, physics, and chemistry to the satisfaction of human wants.

Explanations will of necessity be brief but will serve as an introduction for the students to further reading and study. Our approach to the study of the physical sciences is not that of the professional scientist but that of the man who desires a knowledge and an appreciation of scientific method and attitude and wants it as a necessary part of his own cultural pattern. MTWThF I, 166Phys. Mr. Vaughan and others.

G.C.98f-99w-100s—Fall, winter, and spring quarters. NATURAL SCIENCE PROBLEMS SEMINAR. (Not offered in 1938-39.)

Discoveries within the field of the natural sciences and new uses of the knowledge already possessed have both complicated and helped in the solving of many present-day problems. To understand either the physical or biological sciences, the individual must see them in their broad relationship to the world in which he lives. This course will take as its point of departure questions being asked frequently today in regard to the natural sciences but in a consideration of these questions the discussion will lead into many other fields of knowledge and experience.

How does science affect my problem of earning a living differently from that of my father? How can I adjust my views of science and religion? How can I co-operate with the city in order to get our neighborhood cleaned up? Our neighborhood is very smoky. Does it affect my health and what can I do about it? Should I take any part in water supply and sewage disposal problems? Does the crime problem affect me if I am lucky enough not to be robbed or murdered? Traffic accidents have taken a heavy toll among my friends. What can I do? What are the facts concerning the destructive ability of a 90 horse-power automobile and what is my share of the responsibility? My parents have symptoms of illness. How can I help them? How can I avoid these same ills? How can I distinguish between reliable and unreliable magazine articles on scientific "discoveries"? How can I get reliable information on the products I want to buy? How can I test various products or find authoritative reports by trained testers? What can the Students' Health Service do for me? What is the Department of Public Health doing? How does research work at a university justify the money spent? Are scientists justified in spending \$40,000 on a high potential source? Should technology be held responsible for any misleading advertising broadcast over the radio? What do they do at the U. S. Bureau of Standards?

This course will be a discussion seminar of current problems arising in the field of natural science. The questions given here are merely suggestive of what

may be discussed. It is hoped that members of the class will have many problems which they would like to have considered. Information will be sought from many sources. Successful completion of three quarters of the seminar will be equivalent to one comprehensive examination. The course itself will be the equivalent of any three-hour course in the General College. A background of physical and biological science is essential. Registration is limited to thirty students and individual registration must be approved by the instructors. MW VI. Mr. Vaughan, Dr. Potthoff.

PSYCHOLOGY STUDIES

The Psychology courses may be elected as a part of the comprehensive areas in Individual, Home Life, and Vocational Orientation, pages 26-29, 32-33.

A Psychology comprehensive is also available in 1938-39. Because this field is being so closely interrelated with the core courses in the various orientation comprehensives, no comprehensive in Psychology will be available after this year.

Psychology is concerned with human activity. Because every person is influenced by the behavior of other people, it is wise to study this behavior for its practical significance.

The aim of this course is to present a picture of the ways in which the human being meets the problems of his environment and develops the many traits which are called personality. It seeks to answer the question, "Why do we behave as we do?"

G.C.2-3f—Fall quarter. PRACTICAL APPLICATIONS OF PSYCHOLOGY.

The first half of the course will consider why college students and others differ one from another. Such questions will be discussed as: What is mind? Are all men created free and equal? What is intelligence? What is an I. Q.? How is intelligence measured? Is there more than one kind of intelligence? Can we improve intelligence? Are women smarter than men? Is it true that women never reason? Why are different races of people different? What part does age play in individual differences? Are two people ever exactly alike? Can intelligence be ascertained by the shape of the head and face? Do the stars influence our behavior? Can we read people's minds? Can behavior be predicted from handwriting? Are all blondes fickle? And is there anything to numerology?

In what ways do differences come about? How are all of our various traits developed? The part played by the nervous system in behavior: how we hear, see, taste, smell, and the like; what traits we are born with and what we acquire; what causes emotion; whether emotions are always bad; the way in which advertisers and salesmen play upon our emotion in selling us their products; how we can build up sales resistance; why we fight, become angry, and fall in love; the part played by the glands in emotional behavior, also the influence they exert in our physical development.

The second half of the quarter's work will help to form a more complete picture of the individual. It will deal with questions of how we learn; how we improve our memories; how we break bad habits and build up good ones; how age influences learning; how other people shape our behavior; what is hypnotism; what is mob behavior; what gives rise to new things such as inventions; what is personality; whether it is possible to have two entirely different personalities;

how personality is measured; how we can learn to get along with other people; the kind of work we are best fitted for; and how we can develop healthy, normal, and pleasing personalities.

Having seen how people differ, how these differences come about, and how our traits are combined into personality, the discussion will finally center upon how personality breaks down; what happens when we go crazy; why drunkards see snakes; whether insanity can be cured; how to reduce insanity; the characteristics which make people "peculiar"; if a genius is insane in some respects; what is a complex; what is psychoanalysis; if insanity is hereditary; what happens when people see visions; what is an introvert, an extrovert; why we sometimes think everyone is looking at us or talking about us; what happens when we have the "blues"; why some people think they have every disease they hear of; why we sometimes think the world "has it in for us" and at other times we feel that life is perfect.

Throughout the course stress will be laid upon the practical aspects of psychology rather than the attempt to train the student to become a specialist in the field of human behavior. MWF 1:00-2:20, 201WeH. Mr. Longstaff.

G.C.2w-3s*—Winter and spring quarters. PRACTICAL APPLICATIONS OF PSYCHOLOGY.

This course repeats during the winter and spring quarters the work covered in the fall quarter and described above as G.C.2-3f. MWF II, 201WeH. Mr. Longstaff.

G.C.17w-18s—Winter and spring quarters. HUMAN DEVELOPMENT AND PERSONAL ADJUSTMENT. This course, described on pages 35-36, is a part of this area. MWF III, 101WeH. Mr. Anderson, Mr. Griffiths.

SOCIAL SCIENCE STUDIES

A basic Social-Civic comprehensive is available for all students entering in the fall of 1938 (pages 20, 29). Certain courses in this area may also be elected in connection with the comprehensive areas in home life and vocational orientation. In addition, a second comprehensive examination is available for students entering in the fall of 1938 who complete the basic comprehensive in this area and wish to take a second in the social sciences. Students who entered previous to the fall of 1938 who have had Contemporary Affairs and no more than one other comprehensive in the field of social sciences may elect an additional comprehensive in the area.

A wide range of social science courses is available, as follows:

Economics Studies:

Our Economic Life
Problems of Production, Finance, and Credit
Problems of Consumption Economics
Problems of Business and Government
Basic Wealth

Sociological Studies:

Social Trends and Problems
The Family

History and Government Studies:

American Citizen and His Government
Functions and Problems of Government
International Relations
Minnesota and the Northwest
Pioneer Commonwealth
Modern Commonwealth

Other Social Science Studies:

The Formation of Public Opinion
Seminar in Social Problems

* Course 3s is not open to students who have not had 2w.

Because the programs in social science studies are so flexible, a word of caution is necessary. Avoid a scattered and diffuse program. It is much better to elect six or nine hours in any one of the fields above and then additional hours from one or more of the other groups. Those few students who have a special interest may secure special permission to select their second comprehensive from the Economics or History and Government Studies.

The Social Science area of the General College recognizes the inherent value of American democratic principles. The continuance of an effective democratic order requires an alert and functioning citizenry, among whom leaders and followers are equally important. It requires a citizenry cognizant of significant trends and problems in contemporary society, of their historical development, and of ways and means of meeting them. Training for citizenship in the broadest sense of the term then is the fundamental aim of the Social Science area. The courses offered in the area will describe, analyze, and interpret significant economic, political, and social institutions, processes, and problems to the end that students in the college may be more effectively prepared to understand and to assume their responsibilities and obligations in modern society.

HISTORY AND GOVERNMENT STUDIES

G.C.30f—Fall quarter. THE AMERICAN CITIZEN AND HIS GOVERNMENT.

Popular government rests upon the principle that it is every citizen's business to see that his community is well governed. But, as Lord Bryce pointed out, what is everybody's business is likely to be nobody's business, for most citizens hesitate to assume responsibility. It has therefore been typical of American political life to find the affairs of the community managed by a relatively small part of the body of citizens, motivated often by self-interest. Those who should have been leaders in the political life have been especially slow to interest themselves in public affairs, whereas they ought to be in the forefront. Too many people in the United States have regarded politics as a business to be avoided by those wishing to be thought respectable.

As is discussed in G.C.29w, the functions and activities of government have now expanded to such an extent that politics touches everyone directly, constantly, intimately, and inescapably. It will be increasingly difficult for Americans who have gone to college to remain indifferent to politics, and at the same time many will be anxious to assume the increasing responsibilities which democracy places upon them.

This course is designed to equip the citizen who wishes, and who should, to take his share of the responsibilities as an intelligent member of a self-governing state, and to aid him in making his participation more effective. The structure of the American local, state, and national government will be described with particular attention to the ways in which the various parts of the structure operate, and affect the citizen.

Constant reference will be made to contemporaneous problems and developments in the field of American government, and for this, selected newspaper and periodical material will be used. Instead of, for example, following some text account of the way in which a bill becomes part of the laws which govern our conduct, the progress of legislation in a legislative body will be followed through with the aid of press and other accounts. A similar treatment will be given to

the problems of law enforcement, administration of government, the rôle and activities of the political party, the place of the executive in our government.

Likewise attention will be given to the more important contemporary problems and trends in American government, such as the question of constitutional reform, changes in the structure of government, problems of governmental finance—national, state, and local.

The various ways in which the citizen can take an active part in public affairs will be analyzed carefully, and to this end the functioning of the political party will be studied. Attention will also be placed on the relations between the civil service of the state and the citizens, particularly those with college training.

Most citizens will have to be content with merely voting in primaries and elections as their share of government, but to point out the wider possibilities of popular control over public affairs will be the main purpose of this course. MWF III, 201WeH. Mr. Kirkpatrick.

G.C.29w—Winter quarter. THE FUNCTIONS AND PROBLEMS OF GOVERNMENT.

The introductory course is to be a survey of the functions and problems of government in the present social order.

Recent political and social changes in the United States have served to emphasize the question of the proper rôle of government, and there is a wealth of material on such questions as "individualism," socialization of economic functions, and the growth of the service functions of the state.

The course will include a survey of the origin and nature of government, emphasizing the social, racial, religious, and economic factors which have influenced the development of governmental institutions and services. An examination will be made of the points of view of the fascist, the socialist, the communist, and others who have definite opinions on the rôle that government should play in present-day life.

An examination will next be made of the functions which government now performs in this country. One of the objectives of the course will be to show the evolutionary and constantly expanding rôle of government in human society, and to indicate, by selected readings in textbooks and current periodical literature, the causes and possible results of this expansion. Starting with some function which is now taken for granted, such as police or fire protection, the course will move on to the discussion of functions which are now in the foreground, such as industrial regulation, state planning, state ownership, and economic security. Stress will be laid on the changing economic and social conditions which are bringing changes in governmental action. Some attention will be placed on the machinery with which government carries on its manifold services; and the position of the civil service, and the relations of the college student to government employment, will be treated. MWF III, 201WeH. Mr. Christensen.

G.C.31s—Spring quarter. INTERNATIONAL RELATIONS.

The informed citizen needs to know the problems not only of his own country, but also those of other nations, and of the world on which America so much depends. Finance and business, science and education, have become international, and nations have become increasingly interdependent. To survey this field the department offers this course.

The lectures will deal with the international problems of the principal nations of Europe and the Far East, and with their internal affairs where these affect the

international situation. The emphasis will be placed upon the post-war period, but attention will be drawn to pre-war events where this is necessary for elucidating the present situation, e.g., France's policy toward Germany. The first part of the course will deal with the salient features of the foreign policies of the principal powers. Outstanding problems will then be discussed, e.g., the Polish and Austrian questions, reparations and inter-Allied debts, the Soviet internal and foreign policy. Attention will be drawn to the significance of these questions as illustrations of such general principles as nationalism and imperialism. The efficacy of the League of Nations, disarmament conferences, and the Kellogg Pact will be considered in the light of the previous discussions of specific problems. The above schedule of lectures will be altered in order to explain any outstanding current developments, whether in internal or in foreign affairs. MWF III, 201WeH. Mr. Mills.

G.C.48w—Winter quarter. TERRITORIAL ASPECTS OF WORLD CONFLICT. (Not offered in 1938-39.)

Territorial problems play an important part in international relations, and are, therefore, of vital consequence to everyone. Among the aspects of the problem treated in the course are: conflicts over international boundaries; effort of location, size, and capacity for production on the relations between countries of the world and problems of defense; problem of unifying regions within countries which differ in resources, economic development, population characteristics, and interests; areas of the world whose political control is forced on them by "imperialist" powers.

G.C.32f-33w—Fall and winter quarters. MINNESOTA: THE PIONEER COMMONWEALTH AND THE MODERN COMMONWEALTH.

The purpose of this course is to understand the life of Minnesota and the Northwest. It deals with the story of this region from the days of explorers, voyageurs, and fur traders down to the present.

How have the state and its people come to be what they are? What changes in problems and points of view have marked the development of the state from pioneer to modern times? What have been the relations of Minnesota to the broader Northwest and to the nation and the world? These are some of the questions that the course tries to answer. In doing so, it places sharp emphasis upon social, cultural, and economic factors in the backgrounds of contemporary life.

G.C.32f—Fall quarter. MINNESOTA: THE PIONEER COMMONWEALTH.

It is worth while to know the story of Minnesota exploration and pioneering, for this is the background of modern Minnesota. The native Sioux and Chippewa are studied in the natural setting of their life, and this furnishes the background for learning about the coming of the white man into the Northwest. First, there is the era of the French, with such colorful figures as Radisson, Duluth, Hennepin, and La Verendrye. Then there is the story of the British régime, the epic of the Northwest beaver empire, seen in its world relations. The coming of Lieutenant Pike and the building of Fort Snelling mark the beginnings of the American period. All this opens the way to a study of American exploration and military control, the foundations of the pioneer commonwealth, and the making of the state of Minnesota. Some interesting special topics are: Sibley and the fur traders, Indian missions, the settlement of pioneers, the formation of Minnesota

Territory, the democracy of the frontier, the social and cultural life of our grandparents, and the ordeals of panic, Civil War, and Indian outbreak that the young state went through. Enrolment limited. TTh II, 101WeH. Mr. Blegen.

G.C.33w—Winter quarter. MINNESOTA: THE MODERN COMMONWEALTH.

The second quarter deals with the story of how the state grew up. Much of the emphasis is upon economic and social change, tho politics is not left out of the picture. Some of the larger forces examined are the passing of the frontier, the rise of modern industry, the change from pioneer to modern social conditions, and the challenge of agrarian third parties. The passing of the frontier was accompanied by the building of a network of railroads, the swarming of settlers, a change in farming methods and problems, and a shift from exploitation to conservation. The rise of modern industry includes the story of flour milling, the iron mines, the labor movement, and the growth of cities. As Minnesota came of age socially, standards and points of view changed, education was transformed to meet new needs, social controls were set up, and many other developments took place. Subjects of special interest are: conservation, co-operation, the rise of public health, music and art, the literature of Minnesota and the Northwest, and state activity in many fields touching the social and economic life of the people. The general point of view: Minnesota has developed from an agrarian and individualistic society to a machine-age society, highly integrated, with human interdependence a matter of major importance. Enrolment limited. TTh II, 101WeH. Mr. Blegen.

ECONOMICS STUDIES

The individual in our modern society comes in almost daily contact with various business organizations and enterprises. These institutions influence his conduct not only through the prices that have to be paid but also by the method of organization through which they operate. The following courses attempt to answer some of the questions raised by these relations and to explain how business enterprise functions. They are not intended to be training courses for business, but to give an understanding of this system and of the relations it bears to the individual members of society.

Mankind is also vitally concerned in gaining knowledge about the earth as a place in which to live and as a base for procuring the necessities for life and sustenance. Fortunately, nature is prolific and the earth abounds in materials that can be utilized to give comfort, pleasure, and satisfaction to man. But these natural resources must be intelligently used and conserved if future generations are likewise to enjoy an abundance of material things and wholesome living conditions.

Mankind is also deeply concerned with, and to a large extent dependent upon, plant and animal life both as it exists in nature and in the forms it has taken under domestication. A knowledge of the natural resources and of the laws governing plant and animal life is one of the elements of sound education.

With a view to acquainting students with the nature of these resources and with the interrelationships between them and human life and welfare these courses are devised.

Moreover from the time of the early Greeks the study of earth and man, or environment and man, has been a fascinating pastime as well as a profitable subject of study. A geographic study of environment includes a consideration of

climate, relief, soil, natural vegetation, etc., and their importance for human life. A geographic study of peoples includes a consideration of the distribution of population, the primary production of goods, and the racial, political, and cultural groupings of the human family.

G.C.41f—Fall quarter. OUR ECONOMIC LIFE: PROBLEMS OF CONSUMPTION ECONOMICS.

With this object in mind consideration will be given to such matters as: How are limited supplies of goods and services rationed among those desiring them? How will the particular tasks to be performed by each individual be determined? Of what does income consist? What influences the price consumers pay for commodities? What factors, other than income, influence the consumer's purchases? Through whose hands do the goods pass before they are ready for the consumer? What attitude should the consumer take toward advertising? How can people reduce their insecurity? What can be done to make for more intelligent consumption? MWF VII, 101WeH. Miss Canoyer.

G.C.40w—Winter quarter. OUR ECONOMIC LIFE: PROBLEMS OF PRODUCTION, FINANCE, AND CREDIT.

Goods purchased must be paid for. From what sources does the buyer secure money and credit with which to make these purchases? What determines his wages or salary and the amount he can earn on his investments? What various institutions are willing to pay him interest for the use of savings and how can they afford to pay it? What part do the banks play in this system? What is a national bank? a branch bank? a chain bank system? In what way may other financial institutions serve him? TTh VII, 101WeH. Mr. Myers and associates.

G.C.42s—Spring quarter. OUR ECONOMIC LIFE: PROBLEMS OF GOVERNMENT AND BUSINESS RELATIONS.

The relation of government to business and the consumer will also be considered. Why do we have governmental supervision of public utility companies and how does it operate? Why does the Federal Government regulate the railroads and leave to cities and states the regulation of most public utility companies? What sort of regulation do we have over the so-called trusts and, in general, what is the work of the Federal Trade Commission?

Also, in this course, questions will be raised on other matters of general economic significance. For example, where and how does the government get its funds and how does it spend them? What are the gold standard, inflation and deflation, the Federal Reserve? Why do we have tariff duties; what do we gain by them and what do we lose? What is meant by the labor problem and in what sense is it a problem? What determines the values of land and real estate? What causes prices to rise and fall? TTh VII, 101WeH. Mr. Myers and associates.

G.C.43f—Fall quarter. BASIC WEALTH: NATURAL RESOURCES—THEIR ECONOMIC UTILIZATION AND CONSERVATION.

Most people recognize the sun as a source of heat and energy. They also know that the earth's form and motions result in changing seasons and in varying temperatures and humidity. Few appreciate, however, the effect of temperature, continental climates, and oceans upon the civilization of the human race and

upon plant and animal life. To illustrate these and other important natural phenomena is in part the aim in giving this course. There are resources upon the surface and within the earth which form the basis of economic welfare. These have to do with land areas and their utilization; with food production; with forests and mines; with water for power and irrigation purposes and social needs. Wood, coal, and oil are the principal heat-producing materials of the present age. Will the supply of these resources be adequate for all time? How may we best conserve the great oil reserves, the iron, copper, coal, etc.? The permanence of supply will depend upon the wisdom with which our great natural resources are guarded and used. To picture our natural resources in their true perspective and to teach the principles of conservation and economic utilization is the primary function of this course. MWF II, 101WeH. Staff from the College of Agriculture, Forestry, and Home Economics.

G.C.44w—Winter quarter. BASIC WEALTH: THE ECONOMIC UTILIZATION AND CONSERVATION OF PLANT LIFE.

Nature has covered the earth's surface with plant life. But not all plants are alike. It is a far reach from the algae and mosses to the giant forest trees. What are the differences between the higher and lower forms of plant life? Some plants thrive in one environment and fail in others. Why? What is the nature and origin of plant life? What are the fundamental facts concerning the processes of growth and reproduction? What is the influence of plants upon their environment? How may we best conserve our resources for plant food production? Our forests? To answer these questions and others relating to the uses man makes of plants for food, clothing, and shelter, for feed and forage and for industrial and economic purposes and to demonstrate methods of plant protection, improvement, and conservation through scientific procedure is the purpose of this course. MWF II, 101WeH. Mr. Wilcox.

G.C.45s—Spring quarter. BASIC WEALTH: THE ECONOMIC UTILIZATION AND CONSERVATION OF ANIMAL LIFE.

When did domestication of animals begin? By what processes has differentiation in form and function been brought about? What contributions did their domestication make to modes of living? To opening new land for settlement? To extending the power and culture of nations? To diversifying and intensifying the industrial activities of advanced countries? What are the present trends in animal production, and what are the fundamental causes underlying them? Shall we maintain our fish and wild animal life or shall we destroy without replacing as has been done in the past? These questions indicate the great importance of animals, fowls, fishes and kindred species, and bees in present-day civilization and industry. So intimately is the welfare of the human race associated with, and dependent upon, animal life that every citizen should be informed as to its major contributions to mankind through agriculture and other important industries. MWF II, 101WeH. Mr. Coffey and associates.

FORMATION OF PUBLIC OPINION

Today as never before the individual as consumer and citizen is battered from pillar to post by an army of professionals who seek to channelize his opinions, attitudes, and buying habits. Powerful advertising appeals lead him from article to article, tempt him constantly to spend more than he has, and to

buy what he does not need. To solicit or retain his support for or against legislative proposals, reform movements, governmental change, a vast array of printed or spoken persuasion is thrust at him. He is asked to accept the arguments of experts presenting precisely opposite views on the same issue. He is told half-truths while censorship, suppression, and distortion prevent him from getting the whole story.

Unless the individual learns something of advertising analysis, builds sales resistance, recognizes the need for weighing one statement against the other to distinguish the words of the demagog from those of the intellectually honest, his bewilderment may become complete. To strengthen his defenses, and at the same time to acquaint him with a phenomenon which becomes increasingly necessary to leadership under a complicated modern social order, *Formation of Public Opinion* will endeavor to teach the student something of the methods, sources of power, media, and techniques employed by persons and institutions bent on influencing his share of that mobile force called "public opinion."

G.C.76f—Fall quarter. *FORMATION OF PUBLIC OPINION.*

After a short introduction to the present-day newspaper and other media of mass impression, students will be initiated into modern techniques that serve to fix attitudes, form opinions, create social values, and exercise leadership. Special attention will be given to the propaganda technique of civic, economic, racial, party, and other groups and the analysis of these pressure and political groups and their social objectives. The relationships of the pressure group to propaganda will be explored through case studies of a number of great campaigns to sway public opinion. This course will deal also with the relation of propaganda to violence, non-co-operation and other political methods. Wartime propaganda and its results and the censorship exerted in times of emergency will be revealed. The agents and instrumentalities of propaganda have an important place. The rise of press agency, the work of the public relations counsel, and the development of information and educational service by special interest groups and the government will occupy an important place in this course. Some attention will be paid to the measurement of the results of propaganda. TTh III, 101WeH. Mr. Casey.

G.C.77w—Winter quarter. *FORMATION OF PUBLIC OPINION.*

Modern techniques designed to shape attitudes, to influence public opinion, to affect social values, and to exert leadership include new and powerful media of mass impression. It is the purpose during this quarter to examine the visual and auditory impressions transmitted by radio, motion picture, and advertising. The development of communications in the nineteenth and twentieth centuries, and the influences on public thinking resulting from a rapid succession of scientific discoveries and inventions in this field form a background for a discussion of the contemporary scene. How is radio broadcasting organized? How is it regulated in the United States and in foreign countries? What services does radio attempt to provide? What is the effect of radio on politics? On education? On the transmission of news? Does advertising over radio result in social change? What is the effect of motion pictures on social change? Do these media affect public taste and standards of living? What is the effect of these competitors on the status and functions of the newspaper press? What is the influence of restrictions imposed on these media by governmental agencies and unofficial public organizations? TTh III, 101WeH. Mr. Nafziger.

SOCIOLOGICAL STUDIES

Great advances in science and industry are constantly increasing our knowledge of, and control over, our physical surroundings. Meanwhile progress in solving social problems lags far behind. Our failure to understand and control the social environment deprives us of many of the richest fruits of scientific and technological advances. Today crime costs our nation more than twice the total expenditure for education. Insanity and divorce increase, suicide and lynchings continue, and strikes and labor troubles threaten. These are but a few of the outer signs of underlying social ills. Acquaintance with social institutions and processes and with their current trends and problems is necessary for effective social action.

G.C.49f—Fall quarter. SOCIAL TRENDS AND PROBLEMS I.

The work of this quarter will be devoted to the study of the interaction between social institutions, processes, and trends. The impact of recent trends on such institutions and groups as the family, the neighborhood and community, churches, schools, hospitals and medical centers, and working, professional, and "white collared" groups will be treated. Reference will be made to the situation in Minnesota as set forth in recent studies such as those for the Minnesota State Planning Board. MWF I, 101WeH. Mr. Beck, Mr. Kyllonen.

G.C.50w—Winter quarter. SOCIAL TRENDS AND PROBLEMS II.

The emphasis during this quarter will be on social problems. Some of the problems to be considered are listed below. Major attention will center on the analysis of problems and consideration of available evidence rather than in a search for cure-alls. Population, crime, unemployment, dependence, urbanization, and health problems are among those to be considered. MWF I, 101WeH. Mr. Beck, Mr. Kyllonen.

G.C.51s—Spring quarter. SOCIAL TRENDS AND PROBLEMS III: THE FAMILY.

The spring quarter's work will be concerned with a detailed study of the family as a social institution. The development of the family as a social institution will be traced. Social trends and problems will be reviewed with reference to their impact on the family. How has urbanization, mobility, economic organization, etc. affected the family group? Problems of family disorganization, divorce, postponed marriages, income will be treated from the point of view of their implications for society. MWF I, 101WeH. Mr. Beck, Mr. Kyllonen.

SEMINAR IN SOCIAL PROBLEMS

G.C.37f-38w-39s—Fall, winter, and spring quarters. SEMINAR IN SOCIAL PROBLEMS.

This course is intended to give students a better sense of the interrelated character of political and social problems.

The work will be built around pertinent problems and questions selected from different courses now offered by the college in the political and social studies. The emphasis will be definitely on synthesis. Local political and social issues will be discussed in relation to allied questions in American national government—as for example, the rôle of the Federal Government in local "slum clearance," municipal, state, and national phases of the child labor problem, and state and federal aspects of social security. In turn these topics will be extended to the

international sphere, in order to make a comparative analysis of concepts and practices in this country and abroad. Discussions will draw upon information of a historical, sociological, economic, and psychological nature in order to give a rounded picture of the problems under discussion.

Questions will be posed by the teacher and the student. Members of the class will be expected to participate freely in the discussions. Considerable emphasis will be placed on the importance of pursuing a problem until more valid conclusions are possible, with ample opportunity for questioning the conclusions reached. Outside lecturers will be invited to present special phases of problems before the group. Throughout, the guiding principle will be stressed that possession of the facts is indispensable to an adequate summation, but that instruction in minutiae may be no guarantee of wisdom in essentials.

Persons electing the course should have a basic grounding in subjects now offered in the area. The course itself will be the equivalent of any three-hour course in the General College. Registration is limited to thirty students and individual registration must be approved by one of the instructors. Hours to be arranged. Mr. E. C. Wilson, Miss Ylvisaker.

CONTRIBUTING COURSES

G.C.5f—Fall quarter. STRAIGHT AND CROOKED THINKING.

Elective in preparation for the Individual and Vocational Orientation comprehensive examinations.

In contemporary life everyone is faced with practical problems that require straight thinking; he is also called upon by the newspaper and the radio to determine the value of arguments presented to him in favor of a multitude of causes. The penalties for faulty thinking are perhaps more far reaching than they have ever been.

Reasons for faulty thinking are numerous; some of them cannot be helped but others may be diagnosed and treated by study. The material of this course is drawn from student life, from textbooks that are used in other courses in the college, from editorials and public speeches. The student has the opportunity to analyze his own difficulties and to practice on a wide range of material. Some of the pitfalls in the way of straight thinking, for example, insufficient information, emotional bias, and fallacious reasoning receive detailed attention. TTh III, 201WeH. Miss Shaw.

G.C.110f-111w-112s—Fall, winter, and spring quarters. INTRODUCTION TO THE MATHEMATICS OF BUSINESS.

The Mathematics of Business courses may be elected as a part of the comprehensive in Vocational Orientation, pages 32-33. Students entering previous to the fall of 1938 may elect these courses in connection with courses in economics for an Economics comprehensive in 1938-39.

It is common knowledge that mathematics of an advanced nature plays an essential rôle in science, engineering, and other specialized fields. On the other hand, the most elementary processes of mathematics, such as simple arithmetic, are continually used by all men and women. Between the two extremes, on the

one hand, the technical applications and, on the other, the most elementary uses of mathematics, we find a large body of applications which are of extreme importance to the average educated man and woman. Fortunately, the applications in this intermediate field involve the use of only relatively elementary mathematics. For example, a large and important part of the mathematics of finance and insurance, and interesting sections of the field of statistics can be cultivated with the aid of merely elementary algebra and arithmetic. This course, called an Introduction to the Mathematics of Business, presents selected topics from statistics, finance, and life insurance which are of interest and value to any intelligent citizen. These applications of mathematics are presented on the level of a student who may have had only one year of mathematics beyond the eighth grade, but who is willing to master necessary techniques as a price for an efficient treatment of an interesting body of knowledge. The elements of algebra are reviewed, as a part of the course.

G.C.110f—Fall quarter. ALGEBRAIC METHODS, STATISTICS, AND INTEREST.

The extent of this course can be inferred from the following sample problems: by use of data from the *Statistical Abstract of the United States*, express the monthly production of bituminous coal for each month of 1930 as a percentage of the production in the corresponding month of 1929; plot the resulting percentages. Determine the trend line of wheat production in the United States graphically, by use of data for the years 1890 to 1930. If you borrow \$1,000 for ninety days from a bank which charges 6 per cent interest, payable in advance, at what rate do you actually pay simple interest? Suppose that you buy \$1,000 worth of merchandise and that the terms of payment specified by the seller are net cash in 60 days, or 4 per cent discount for cash in 15 days, what is the highest interest rate at which you could afford to borrow money in order to take advantage of the discount offered to you? Compute the arithmetic mean of the hourly readings of the temperature yesterday in Minneapolis. How long will it take money to double itself if it is invested (1) at 5 per cent, compounded quarterly, and (2) at 5 per cent simple interest? MWF IV, 101WeH. Miss Carlson.

G.C.111w—Winter quarter. ANNUITIES AND THEIR APPLICATION TO PROBLEMS INVOLVING THE DISCHARGE OF DEBTS BY PERIODIC INSTALLMENTS, DEPRECIATION, AND BONDS.

The extent of this course can be inferred from the following sample problems: compute the annual rate of depreciation on a motor truck which costs \$1,250 and is worth only \$250 at the end of three years; find the depreciation during each year. How much money in hand today would be sufficient to provide you with \$50 per month for two years, if you were able to invest money at 6 per cent, compounded monthly? In return for a loan of \$1,000 you agree to make equal payments at the end of each three months for four years; if these payments include all interest at the rate of 8 per cent, payable quarterly, find the size of the payments. What rates of interest, compounded annually, are equivalent to the interest charges specified by a Morris Plan bank, for its various types of loans? Suppose that you bought a \$1,000, 7 per cent bond of the Great Northern Railway at the highest price for which such a bond was sold yesterday on the New York Stock Exchange. What interest rate does this investment yield, assuming that you will hold the bond until its maturity date? Prerequisite, G.C.110f. MWF IV, 101WeH. Miss Carlson.

G.C.112s—Spring quarter. PROBABILITY AND LIFE INSURANCE.

The extent of this course can be inferred from the following sample problems: compute the smallest possible annual premium which an insurance company could afford to charge, if it had no overhead expense, in case you should buy an ordinary \$1,000 life insurance policy today. What sum of money, in hand when a man is of age 65, would be sufficient for him to buy a pension of \$100 per month for the rest of his life, under the usual conditions specified by insurance companies? Pre-requisite, G.C.111w. MWF IV, 101WeH. Miss Carlson.

G.C.128s—Spring quarter. INTRODUCTION TO PHILOSOPHY.

Elective in preparation for the Individual Orientation comprehensive examination.

This course is designed to aid students in working out an intelligent philosophy of life with which to meet the problems presented by (1) the world of modern science and (2) modern society. The following topics are included in the readings and class discussions: the origin of the universe; the nature and existence of God; the problem of evil and freedom of the will; the meaning of truth and knowledge; science, faith, and mysticism; miracles and supernaturalism; the nature of the physical world and of mind; the origin of life; the immortality of the soul; mental telepathy and clairvoyance; the naturalistic view of the evolution of mind; the instrumental view of intelligence; the history of intelligence from primitive times to the present; the struggle to attain freedom of thought and expression; the meaning and origin of morality; the history of moral ideas; the problem of moral relativity; the reconstruction of morality; the relation between morality and happiness; the meaning and measurement of happiness; classical ethical systems; problems of life and death; the inequality of the sexes; sex education; democratic ideals; problems of social, political, and economic democracy; racial problems; war and peace; the ideal society; traits of character and intellect in a civilized society; the concept of progress. MWF II, room to be arranged. Mr. Everett.

G.C.129f—Fall quarter. SURVEY OF RECREATION ACTIVITIES.

This course canvasses the various recreation activities open to the individual or to recreation leaders. Through lectures, discussions, movies, special projects, and demonstrations the course will introduce students to activities that will provide a wholesome use of the increasing amount of leisure time. The course is designed to serve both the student interested in recreation as a profession and the student interested in learning the variety of recreation, leisure time, or hobby activities that may be utilized in one's own life. TTh VI, 214CH. Mr. Haislet.

G.C.137f-138w-139s—Fall, winter, and spring quarters. BIOGRAPHY (Not offered in 1938-39.)

A study of human character as revealed in the lives of distinguished men and women. About fifty individuals will be studied in lectures and through selected readings. In each case the lectures will be given by a member of the university faculty particularly conversant with the life and times of the individual studied. The treatment will reveal the background of environmental conditions out of which the individual rose to achievement, the problems he faced, and his individual contribution to their solution. Selection will be made from the following fields of human activity: government and politics, science, business, industry, religion, medi-

cine, education, engineering, music, painting, drama, philosophy, agriculture, literature, invention, and adventure. The point of view will be primarily psychological: each subject will be treated so as to reveal his individual qualities of mind and character. Persons will be chosen from many countries and from many periods of history. Generous recognition will be given to persons who have played their rôles in modern times. Recent years have produced a wealth of biographical writing that will be freely drawn upon for suggested readings. Each student will select two or more biographies each quarter and read widely beyond the scope of the formal lectures. University faculty.

G.C.140f-141w-142s—Fall, winter, and spring quarters. **INDIVIDUAL STUDY AND RESEARCH.**

In accordance with the General College policy of molding integrated courses to meet the needs of individuals, one group of students will be excused from part or all of their course work and launched on individual research. This group will be divided into small sections, each section choosing a special problem exemplified in the Twin City area. For example, one section may choose the legal system. Each student in this section would then visit and study throughout the year the city, state, and federal courts, observing every detail of procedure and writing a report on it. This report will be started immediately after the student's first actual study. It will then be presented to the instructor in charge who will assign general readings on the subject. The report may then be referred to the instructor in psychology, who on the basis of it would suggest certain readings on the psychology of crime, and the psychological basis of the law. The students could then go to a biologist for suggestions on the biological basis of crime and of the law, to economists for their point of view, and so on. Instructors in English might suggest Dickens' account of the legal system in his day, a historian might trace the development of procedures in the common law. The reports would be written in the Writing Laboratory (see pp. 44-45). These special reports could then be put together to form a comprehensive report on the place of legal procedure in Minnesota, its background, and its connection with scientific and cultural developments. In the meantime, other groups would apply similar tactics to the public relief and charity systems, the educational system, power utilization, etc. In preparing a final report on all these phases of contemporary life, students would gain a comprehensive viewpoint of the nature and interrelations of the society in which they live and which they will later help to mold.

Registration for this course of study will be made only by conference with the director or his associates. Registration will be limited and preference will be given to second year General College students who have shown evidence of the ability and initiative needed to carry on this type of work. General College faculty.

G.C.160f†-161w‡-162s‡—Fall, winter, and spring quarters. **PHOTOGRAPHY.**

Photography has increasingly become an attractive, pleasant, useful, and profitable hobby. With the development of a branch of the university photographic laboratory in the Department of Visual Education in Room 3, Wesbrook Hall, the General College has been able, with the co-operation of Mr. V. P. Hollis, to offer a course for amateurs in photography.

This course will take up photographic printing, enlarging, negative making, and manipulation. Laboratory work in these processes will continue through the

† A fee of \$5 per quarter is charged for this course.

entire course, supplemented by the study and discussion of cameras, lenses, lighting, composition, and the finishing and mounting of prints. Students will have the opportunity to make photographs on field trips and in the studio. Competitions will be held for students' photographs and the prints will be judged and ratings given.

The course fee includes the use of the laboratory equipment, developing and printing chemicals, and a limited amount of contact and enlarging paper. The course requires a focusing camera with a ground-glass back. Miniature cameras using 35 mm. motion picture film will be permitted. Cameras must be approved by the instructor. Enrolment limited. MW VI, VII, VIII, room to be arranged. Mr. Nestler, Mr. Vaughan. Other sections will be organized if enrolment warrants it.

G.C.163f—Fall quarter. HOME LANDSCAPE PLANNING.

This course may be elected as part of the General Arts comprehensive.

An introduction to the principles of landscape design and their use in decorating the home grounds; the planning of small places, garden design, and landscape compositions. The purpose of this course is to make the home grounds a more useful, livable, and attractive place by improving and beautifying the grounds. This work will also serve as a background for the pursuit of the popular hobby of gardening. Good and bad examples of home landscaping will be demonstrated and illustrated. Since a knowledge of plant materials, trees, shrubs, and garden plants is essential before they can be artistically used in a landscape composition, a study of plant materials will also be made during the course as part of the laboratory work. Independent student projects such as a problem in the landscaping of typical home grounds and the planning of gardens will serve to give the members of the class an opportunity to put into practice the principles of good landscape planning and composition. MWF VIII, 1 hr. lab. to be ar., 4Bo. Mr. Phillips.

G.C.164w—Winter quarter. HOME LANDSCAPE PLANTING AND MATERIALS.

This course may be elected as part of the General Arts comprehensive.

A course for those interested in making the home surroundings beautiful with flowers and plants; and an opportunity for the garden lover to learn more about plants, how, when, and where to grow them. Planting arrangement and composition will be particularly stressed. There will be a problem in planting typical home grounds and gardens.

The course will be conducted from a cultural and appreciation viewpoint, which should appeal to those who are not especially interested in the purely horticultural and practical phases of the problems of home landscaping. MWF VIII, 1 hr. lab. to be ar., 4Bo. Mr. Phillips.

G.C.165s—Spring quarter. HOME GARDENING.

This course may be elected as part of the General Arts comprehensive.

A course for those who are interested in making their home surroundings more beautiful and an opportunity for the garden lover to learn more about plants and how to grow them successfully. Attention will be given to soils and their

improvement, plants and their reproduction, gardens and their care. All the practical phases of ornamental gardening will be covered, and there will be student projects in growing plants from seeds and slips, the preparation of flower beds, pruning, fertilizing, planting, and transplanting. Maintenance and care (pruning, cultivating, control of insects and diseases, watering, weeding, etc.). MWF VIII, 1 hr. lab. to be ar. 4Bo. Mr. Phillips.

Physics15f-17w—Fall and winter quarters. THE PHYSICAL BASIS OF MUSIC and PHYSICS OF TONE COLOR AND TONE PRODUCTION. (Given in the College of Science, Literature, and the Arts.)

Courses previously given in General College in this field and dealing with the physics of music, speech, and hearing are now given in the Department of Physics in the College of Science, Literature, and the Arts. They are open to General College students with a special interest in either physical science studies or music.

PHYSICAL EDUCATION FOR MEN

1f*-2w*-3s*—SPORTS EDUCATION.

All men are required to complete satisfactorily three quarters of work in sports education. The Department of Physical Education for Men has developed a new and interesting program in sports education for the General College based primarily upon individual needs. The values of this type of training during your college years will only become apparent and be realized as time goes on.

As a worth-while leisure time activity, as an important factor in the maintenance of physical and mental health, as a means for the increased visual enjoyment of athletic games and contests, and as a valuable means of social contact, training in sports activities and participation in recreational sports activities should be a part of everyone's general education.

Therefore, the General College is providing an education in this field through the facilities of the Department of Physical Education for those who are lacking in knowledge, appreciation, and proficiency in sports activities. It is not the purpose to put all students through the same mill of activities. Instead, assignments will be made on the basis of individual needs.

In order to determine individual needs, a preliminary test will be given each man during the first week of the fall quarter. Men who demonstrate all-around knowledge and ability will be exempted from any requirement or be given credit for participation in elective courses or for participation in intramural, extramural, or intercollegiate sports. Others may be given instruction in one or more specific activities. Some men will participate in the survey course for all three quarters, receiving instruction in twelve different sports activities. A smaller group of men who have physical defects will receive instruction in recreational activities in which they can take part in spite of their handicaps.

*Sports Education**

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s	Sports Education	III	MWF	CH	Mr. Piper
		IV	MWF		and staff

(All freshmen in General College and College of Education)

Fall: Touchball, swimming, volleyball

Winter: Boxing, wrestling, basketball, golf

Spring: Soft ball, tennis, handball, squash

* Towel and locker fee of \$1.25 per quarter; uniform fee of \$1 per quarter.

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s	Sports Education. Elective for men in all other colleges:				sophomores in the General College and any
	Survey Course (including above activities)	III	MWF		
	Beginning Swimming	II	MWF		
	Intermediate Swimming	II	TThS		
	Advanced Swimming	III	MWF		(winter and spring only)
	Lifesaving	III	TThS		
	Miscellaneous Swimming	VI	MWF		
	Boxing	VIII	MWF		(fall and winter only)
		IX	MWF		(fall and winter only)
	Tennis	VII	MWF		(spring only)
	Individual Physical Education Activities (by special permission)	III	MWF		
		IV	MWF		
		VIII	MWF		(fall and winter only)
		VII	MWF		(spring only)

Substitution of athletic team practice may be allowed by the department to men who rank sufficiently high on the introductory test.

PHYSICAL EDUCATION FOR WOMEN

The University presents exceptional facilities for the enjoyment of golf and tennis; the majority of women students on entrance cannot take advantage of them because they lack the skill to play these games. The state is full of lakes with sandy beaches; the majority of women do not know how to swim. This department offers courses in 20 branches of physical education which might serve students for recreation in leisure time and yet there are some entering students who do not know enough about any one of them to play them. This sequence aims to help students to round out their repertory of motor skills, both recreational and utilitarian, not only for enjoyment but for personal improvement. It meets twice a week for laboratory work in gymnasium, pool, or playing field. The physical activity is fitted to individual interests, needs, and capacities through a number of classification tests and examinations that occur in Freshman Week and at the beginning and end of each quarter. The entrance physical examination is given as an organic capacity classification of which the highest rating is "no restriction." The photograph recording the student's best posture may show a perfect posture or varying degrees of round shoulders, low chest, or sway-backs. The written examination in knowledge of the human mechanism, the way it moves, and in team and individual games and sports gives further basis for direction and advice. If a student is lacking in any of the above fields she is expected to take at least one quarter of training in that field. On the other hand, satisfactory ability in a field frees the student from that specific requirement and allows free choice of a physical education activity for that quarter. For the student who cannot profit by participation in the regular class activities, there is carefully adapted and individualized exercise fitting her particular needs.

Requirements.—All women students are required to complete **six quarters of work** in physical education including hygiene. Exemption from this requirement may be had only by presenting your case to the director or his associates. Petition for exemption should be filled out and signed at the time of registration. Action will be taken within the next few days and the student notified if exemption is not granted.

All women students in the college will be required to take the course in hygiene unless they pass the classification test in hygiene.

Classification tests.—All students must take classification tests, to be given during the fall quarter in order that the type of activity best suited to the individual may be determined. Students who fail in any or all of these classification tests will be required to take prescribed courses in physical education to help them reach certain standards of achievement. These students will be given guidance in choosing their elective courses.

Statement of fees.—All exercise courses, including swimming, for which registration is required, except horseback riding, \$1.75 a quarter. Maximum fee paid by a student in physical education, \$3.50 a quarter.

No.	Title	Hour	Day	Bldg.	Instructor
7f-w-s	Lectures in Physical Education and Health. —The essential aspects of the care of personal health.				
	Lectures in Physical Education and Health				
	Sec. 1 (fall, winter, spring)	I	MW	201WGm	Ar
	2 (fall)	II	TTh	201WGm	Ar
	3 (fall, winter)	VI	MW		

Students will enroll in this course in their first quarter in the General College. If students are exempted from this course by examinations, they must substitute an activity course. Following completion of Course 7, they will enroll in five additional quarters of physical activity unless an exemption for one or more quarters has been granted. These special activities are to be selected from those given below.

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s- 4f-5w-6s	General Course in Physical Education				
	<i>Aquatics</i> ‡				
	Canoe Paddling (spring)	II	TTh	58WGm	Miss Starr
	Class limited to 15				
	Swimming, Beginning* (fall, winter, spring)				
	Sec. 1	II	TTh	51WGm	Ar
	2	IV	MW	51WGm	Ar
	3	VII	WF	51WGm	Ar
	4	VIII	TTh	51WGm	Ar
	Swimming, Elementary† (fall, winter, spring)				
	Sec. 1	III	TTh	51WGm	Ar
	2	VI	MW	51WGm	Ar
	Swimming, Intermediate				
	Sec. 1 (fall, winter)	II	TTh	58WGm	Ar
	2 (spring)	III	TTh	58WGm	Ar
	3 (fall, winter, spring)	IV	WF	58WGm	Ar
	4 (fall, winter, spring)	VIII	MW	51WGm	Ar
	Swimming, Advanced (fall, winter, spring)				
	Sec. 1	VI	MW	58WGm	Ar
	2	VIII	MW	58WGm	Ar
	3	VIII	TTh	58WGm	Ar

* For students with no experience in swimming.

† For students with some experience in swimming.

‡ A physical education fee of \$1.75 per quarter is charged for any activity under this unit.

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s- 4f-5w-6s	General Course in Physical Education— <i>Continued</i>				
	<i>Aquatics‡—Continued</i>				
	Diving, Advanced (fall, spring)	III	MW	58WGm	Ar
	Class limited to 15				
	Lifesaving				
	Sec. 1 (winter)	III	MW	58WGm	Ar
	2 (spring)	II	MW	58WGm	Ar
	3 (spring)	IX	TTh	58WGm	Ar
	Recreational Swimming and Water Games (spring)	VII	TTh	58WGm	Ar
	<i>The Dance‡</i>				
	Folk Dancing (fall, winter)	II	MW	151WGm	Ar
	Recreational Rhythms (winter, spring)	VI	MW	151WGm	Ar
	Basic rhythmic training through recreational rhythmic activities.				
	Modern Dance, Elementary				
	Sec. 1 (fall, winter, spring)	VII	TTh	151WGm	Miss Gardner
	2 (fall)	VI	MW	151WGm	Miss Gardner
	Modern Dance, Advanced (fall, winter, spring)	IV	WF	151WGm	Miss Gardner
	Tap Dancing, Elementary				
	Sec. 1 (fall)	III	MW	151WGm	Ar
	2 (fall, winter)	III	TTh	151WGm	Ar
	Tap Dancing, Intermediate (fall, winter)	VIII	TTh	151WGm	Ar
	<i>Individual Sports and Activities‡</i>				
	Archery, Elementary				
	Sec. 1 (spring)	I	MW	60WGm	Ar
	2 (fall, winter)	II	MW	60WGm	Ar
	3 (fall, winter, spring)	VI	TTh	60WGm	Ar
	4 (fall)	VI	MW	60WGm	Ar
	5 (winter)	VIII	MW	60WGm	Ar
	6 (spring)	III	TTh	60WGm	Ar
	7 (spring)	IV	WF	60WGm	Ar
	Archery, Intermediate				
	Sec. 1 (fall, winter)	III	MW	60WGm	Ar
	2 (fall)	VII	TTh	60WGm	Ar
	3 (spring)	II	MW	60WGm	Ar
	Badminton (winter)				
	Sec. 1	I	MF	153WGm	Ar
	2	VI	MW	153WGm	Ar
	Golf, Elementary§				
	Sec. 1 (winter)	II	TTh	60WGm	Ar
	2 (spring)	I	TTh	60WGm	Ar
	3 (spring)	III	MW	60WGm	Ar
	4 (spring)	VII	TTh	60WGm	Ar
	Golf, Intermediate§				
	Sec. 1 (fall)	VII	MW	60WGm	Ar
	2 (spring)	II	TTh	60WGm	Ar
	3 (spring)	VI	MW	60WGm	Ar
	Horseback Riding (See non-fee courses)				
	Individual Body Building (formerly Orthopedics)				
	Sec. 1 (fall, winter)	II	TTh	153AWGm	Miss Mee
	2 (fall, winter)	III	TTh	153AWGm	Miss Mee
	3 (fall, winter)	VI	MW	153AWGm	Miss Mee

‡ A physical education fee of \$1.75 per quarter is charged for any activity under this unit.

§ Students must supply their own equipment.

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s- 4f-5w-6s	General Course in Physical Education—Continued				

Individual Sports and Activities‡—Continued

Skating (winter)

Plain, figure, and racing. Classes meet in Hippodrome.

Sec. 1	VII	WF	151WGm	Ar	
2	VIII	WF	151WGm	Ar	
Tennis, Elementary¶ (spring)					
Sec. 1	I	MW	151WGm	Ar	
2	I	TTh	151WGm	Ar	
3	III	TTh	151WGm	Ar	
4	IV	WF	151WGm	Ar	
5	VI	MW	151WGm	Ar	
Tennis, Intermediate¶ (spring)					
Sec. 1	II	TTh	151WGm	Ar	
2	III	MW	151WGm	Ar	
3	VII	WF	151WGm	Ar	
Tournament Tennis (spring)	VIII	TTh	151WGm	Ar	

Team Sports and Activities‡

Baseball (spring)	III	TTh	151WGm	Ar
Basketball, Elementary (winter)				
Sec. 1	III	TTh	151WGm	Ar
2	VII	TTh	60WGm	Ar
3	IV	WF	151WGm	Ar
Basketball, Intermediate (winter)				
Sec. 1	VI	MW	60WGm	Ar
2	VIII	TTh	151WGm	Ar
Field Hockey (fall)	VI	MW	151WGm	Ar
Group Body Building (winter)	VII	TTh	153WGm	Ar
Exercises for flexibility and grace and ease of movement.				
Posture and Daily Life Skills				
Sec. 1 (fall)	I	TTh	153WGm	Ar
2 (fall)	III	TTh	153WGm	Ar
3 (fall)	IV	WF	153WGm	Ar
4 (winter)	II	MW	153WGm	Ar
Introductory Course in Sport Skills				
Sec. 1 (fall)	III	TTh	60WGm	Ar
2 (winter)	IV	WF	60WGm	Ar
3 (winter)	I	MW	60WGm	Ar
Speed Ball (fall)	IV	WF	151WGm	Ar
Sports and Dance Appreciation				
Courses† (winter)	IV	MW	201WGm	Ar
Movies, demonstrations, talks by experts on sports and dance.				
Volleyball				
Sec. 1 (fall)	II	MW	153WGm	Ar
2 (winter, spring)	III	MW	151WGm	Ar

General Courses for Which No Physical Education Fee Is Charged

8s	Horseback Riding‡‡				
	Sec. 1	VIII	TTh	151WGm	Miss Starr
	2	IX	TTh	151WGm	Miss Starr

† Open only to sophomores with permission of department.

‡ A physical education fee of \$1.75 per quarter is charged for any activity under this unit.

‡‡ For horseback riding students will pay about \$1 per lesson. Attendance at class hours is required for credit. Class meetings are one hour. Groups will be arranged according to riding ability.

¶ Students taking tennis must pay \$1 for tennis permit.

prescribed two-year course. In turn, they receive one complete regulation officer's uniform which may be retained, and are paid quarterly the cost of the ration of the U. S. Army for each day of the university calendar while attending classes, and all expenses incident to camp training. The aggregate amount received by each student is approximately \$200.

151f-152w-153s—First Year Advanced (1A)—Prerequisite: Basic Course 4-5-6.

Subjects: Map and aerial photo reading, leadership, gunnery and position finding, and combat orders.

154f-155w-156s—Second Year Advanced (2A)—Prerequisite: 151-152-153.

Subjects: Military history, military law, administration and supply, field engineering, leadership, motor transportation, artillery material, artillery tactics and orientation.

Credits: Three (3) credits per quarter, total 18, applicable toward graduation and a degree.

SIGNAL CORPS

Enrolment in the Signal Corps unit, R.O.T.C., is restricted to election by physically fit male citizens enrolled in the Department of Electrical Engineering only.

General

Enrolment in the Reserve Officers' Training Corps involves no obligation for military service prior to receiving a commission in the Officers' Reserve Corps, and, according to a decision by the United States Supreme Court, is not considered bearing arms.

Upon the successful completion of the Advanced Course, the student is commissioned in the Officers' Reserve Corps, Army of the United States. Thereafter, while holding such commission, he may be subject to call in time of national emergency, or may, upon his own application, engage in active duty training, during which period he receives the same emoluments as an officer of like grade in the United States Army.

(Coast Artillery Unit Only)

Basic Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f*	First Year Basic Course (1 cred.; no prereq.)				
	Sec. 1	III	MWF	A	Ar
	2	VI	MWF	A	Ar
	3	VIII	MWTh	A	Ar
2w*	First Year Basic Course (1 cred.; no prereq.)				
	Sec. 1	III	MWF	A	Ar
	2	VI	MWF	A	Ar
	3	IX	MWF	A	Ar
3s*	First Year Basic Course (1 cred.; no prereq.)				
	Sec. 1	I	M	A	Ar
		V, IX	T	A	Ar
	2	I, V, IX	T	A	Ar
	3	V, VII, IX	T	A	Ar
4f*	Second Year Basic Course (1 cred.; soph.; prereq. 1-2-3, higher algebra and plane trigonometry)				
	Sec. 1	II	TThS	A	Ar
	2	IV	MWF	A	Ar
	3	VIII	MWTh	A	Ar

* Offered on the Main campus.

No.	Title	Hour	Day	Bldg.	Instructor
5w*	Second Year Basic Course (1 cred.; soph.; prereq. same as for 4f)				
	Sec. 1	II	TThS	A	Ar
	2	IV	MWF	A	Ar
	3	IX	MWF	A	Ar
6s*	Second Year Basic Course (1 cred.; soph.; prereq. same as for 4f)				
	Sec. 1	I, V, IX	T	A	Ar
	2	I	M	A	Ar
		V, IX	T	A	Ar
	3	V, VII, IX	T	A	Ar

NOTE.—Students may register for Courses 1 to 6 and substitute playing in the band for regular military work, with the understanding that this choice renders them ineligible for the Advanced Courses. Premedical students should take First Year Basic Course in C.A.C. unit; Second Year Basic Course and Advanced Courses in Medical Unit are given in the Medical School.

Advanced Courses

151f-152w*	First Year Advanced Course (3 cred. per qtr.; prereq. 4-5-6) Total of five hours to be taken as follows:				
	One of the two-hour sections:				
	Sec. 1	VI-VII	M	A	Ar
	2	VI-VII	W	A	Ar
	One of the three-hour sections:				
	Sec. 1	II	MWF	A	Ar
	2	IV	MWF	A	Ar
	3	VI	MWF	A	Ar
153s*	First Year Advanced Course (3 cred.; prereq. 4-5-6) Total of five hours to be taken as follows:				
	Sec. 1	V, IX	T	A	Ar
	One of the three-hour sections:				
	Sec. 1	II	MWF	A	Ar
	2	IV	MWF	A	Ar
	3	VI	MWF	A	Ar
154f*	Second Year Advanced Course (3 cred.; prereq. 151-152-153) Total of five hours to be taken as follows:				
	One of the two-hour sections:				
	Sec. 1	VIII-IX	W	A	Ar
	2	VIII-IX	F	A	Ar
	One of the three-hour sections:				
	Sec. 1	I	MWF	A	Ar
	2	IV	MWF	A	Ar
	3	VI	MWF	A	Ar
155w*	Second Year Advanced Course (3 cred.; prereq. 154) Total of five hours to be taken as follows:				
	One of the two-hour sections:				
	Sec. 1	VIII-IX	W	A	Ar
	2	VIII-IX	F	A	Ar
	One of the three-hour sections:				
	Sec. 1	III	MWF	A	Ar
	2	IV	MWF	A	Ar
	3	IV	TTh	A	Ar
		II	S	A	Ar

* Offered on the Main campus.

No. 156s*	Title	Hour	Day	Bldg.	Instructor
	Second Year Advanced Course (3 cred.; prereq. 154-155)			Total of five hours to	
	be taken as follows:				
	Sec. 1	V, IX	T	A	Ar
		One of the three-hour sections:			
	Sec. 1	I	MWF	A	Ar
	2	IV	MWF	A	Ar
	3	VI	MWF	A	Ar

NOTE.—The general rule regarding credit for the Advanced Courses is: "Three credits per quarter will be allowed for work in the advanced R.O.T.C. courses with a maximum of 18 quarter credits for the two-year course."

EXPLANATIONS

Course numbering.—A course is designated by a general title, a number, and a letter. It has the same number in whatever quarter it is offered. The quarter is indicated by the letter (f, fall; w, winter; s, spring; su, summer). Examples:

1f-2w, a two-quarter course given in the fall and winter.

1w-2s, the same course given in the winter and spring.

3f,w,s, a one-quarter course given each quarter.

Buildings.—A, Armory; Ad, Administration, University Farm; Adm, Administration; Bo, Botany; Bu, Burton Hall; C, Chemistry; CH, Cooke Hall; CWI, Child Welfare Institute; E, Main Engineering; EE, Electrical Engineering; F, Folwell Hall; HE, Home Economics, University Farm; HS, Health Service; J, Jones Hall; Lib, Library; M, Mines Bldg.; ME, Mechanical Engineering; MeS, Medical Sciences; MH, Millard Hall; MiU, Minnesota Union; Mu, Music; NMA, Northrop Memorial Auditorium; P, Pillsbury; Ph, Physics; Psy, Psychology; Pt, Pattee Hall; S, Stadium; ShH, Shevlin Hall; V, Vincent Hall; WeH, Wesbrook Hall; WGm, Women's Gymnasium; Z, Zoology.

OTHER ABBREVIATIONS AND SYMBOLS

I, II, III, etc. First hour (8:30 to 9:20), second hour (9:30 to 10:20), third hour (10:30 to 11:20), fourth hour (11:30 to 12:20), fifth hour (12:30 to 1:20), sixth hour (1:30 to 2:20), seventh hour (2:30 to 3:20), eighth hour (3:30 to 4:20), ninth hour (4:30 to 5:20).

(At the University Farm, first hour, 8:15 to 9:05, second hour, 9:15 to 10:05, etc., to 1:05; sixth hour, 1:30 to 2:20, etc.)

Ar. To be arranged or assigned.

Aud. Auditorium.

Cred. Credits.

Lab. Laboratory.

Lect. Lecture.

MTWThFS Monday, Tuesday, etc.

Prereq. Prerequisite.

Rec. Recitation.

Sec. Section.

* Offered on the Main campus.

SCHEDULE

2-3f	Practical Applications of Psychology	1:00-2:20	MWF	201WeH	Mr. Longstaff
2w-3s	Practical Applications of Psychology	II	MWF	201WeH	Mr. Longstaff
5f	Straight and Crooked Thinking	III	TTh	201WeH	Miss Shaw
7f-8w-9s	Individual Orientation I, II, III	IV	MW	206WeH	} Mr. Thornton, G. C. faculty
	(Limited to 90)				
7w-8s	Individual Orientation I, II	VII	TTh	206WeH	} Miss Hunt
	(Limited to 90)				
10s	Food Selection and Purchase	VI	MWF	206WeH	
	(Limited to 90)				
11w	Clothing Selection, Purchase, and Care	VI	MTWF	206WeH	Miss Ludwig
	(Limited to 90)				
13f	Selecting and Maintaining a Home	VI	MWF	206WeH	Miss V. Goldstein
	(Limited to 90)				
15w	Renting, Buying, or Building a Home	III	MW	206WeH	Mr. Jones
	(Limited to 90)				
17w-18s	Human Development and Personal Adjustment	III	MWF	101WeH	Mr. Anderson, Mr. Griffiths
21s	Income Management, Individual and Household Buying	VI	TTh	206WeH	Miss Kafka
	(Limited to 90)				
23f-24w-25s	Home Life Orientation I, II, III	III	TTh	206WeH	} Miss Haas, G. C. faculty
	(Limited to 90)				
23s	Home Life Orientation I	II	TTh	206WeH	
	(Limited to 90)				
29w	Functions and Problems of Government	III	MWF	201WeH	Mr. Christensen
30f	American Citizen and His Government	III	MWF	201WeH	Mr. Kirkpatrick
31s	International Relations	III	MWF	201WeH	Mr. Mills
32f-33w	Minnesota History	II	TTh	101WeH	Mr. Blegen
	(Limited to 90)				
34f-35w-36s	Contemporary Society I, II, III	II	MW	206WeH	} Miss Ylvisaker, G. C. faculty
	(Limited to 90)				
34s	Contemporary Society I	III	MW	206WeH	
	(Limited to 90)				
37f-38w-39s	Seminar in Social Problems	Hr. and rm. to be ar.			Mr. E. C. Wilson, Miss Ylvisaker
40w	Our Economic Life	VII	TTh	101WeH	Mr. Myers and associates
41f	Our Economic Life	VII	MWF	101WeH	Miss Canoyer
42s	Our Economic Life	VII	TTh	101WeH	Mr. Myers and associates
43f	Basic Wealth	II	MWF	101WeH	Staff, College of Agr., For., and H. E.
44w	Basic Wealth	II	MWF	101WeH	Mr. Wilcox
45s	Basic Wealth	II	MWF	101WeH	Mr. Coffey and associates
49f-50w-51s	Social Trends and Problems I, II, III	I	MWF	101WeH	Mr. Beck, Mr. Kyllonen
55f	Literature Today	IV	MWF	201WeH	Mr. Appel
56w	Literature Today	IV	MWF	201WeH	Miss Kranhold
57s	Literature Today	IV	MWF	201WeH	Mr. Weaver

61f-62w-63s	Writing Laboratory							
	Sec. 1 (Limited to 35)							
	Lecture, discussion	I-II	M	302WeH				
	Laboratory	I-II	W	302WeH				
	2 (Limited to 35)							
	Lecture, discussion	I-II	M	302WeH				
	Laboratory	I-II	F	302WeH				
	3 (Limited to 35)							
	Lecture, discussion	III-IV	M	302WeH				
	Laboratory	III-IV	W	302WeH				
	4 (Limited to 35)							
	Lecture, discussion	III-IV	M	302WeH				
	Laboratory	III-IV	F	302WeH				
	5 (Limited to 35)						} Mr. Appel, Mr. Corbett, Miss Kranhold, Mr. Weaver	
	Lecture, discussion	VI-VII	M	302WeH				
	Laboratory	VI-VII	W	302WeH				
	6 (Limited to 35)							
	Lecture, discussion	VI-VII	M	302WeH				
	Laboratory	VI-VII	F	302WeH				
	7 (Limited to 35)							
	Lecture, discussion	I-II	T	302WeH				
	Laboratory	I-II	Th	302WeH				
	8 (Limited to 35)							
	Lecture, discussion	VI-VII	T	302WeH				
	Laboratory	VI-VII	Th	302WeH				
	Clinic hours	III-IV	T	302WeH				
		III	Th	302WeH				
70f-71w-72s	Oral Communication							
	Sec. 1 (Limited to 35)	I	TTh	306AWeH				} Mr. Gilkinson and assistant
	2 (Limited to 35)	II	TTh	306AWeH				
	3 (Limited to 35)	VII	TTh	306AWeH				
73f-74w-75s	Current History I, II, III							
	Sec. 1 (Limited to 90)	IV	TF	206WeH			} Mr. E. C. Wilson, G. C. faculty	
	2 (Limited to 90)	VII	TTh	201WeH				
76f	Formation of Public Opinion	III	TTh	101WeH			Mr. Casey	
77w	Formation of Public Opinion	III	TTh	101WeH			Mr. Nafziger	
88f-89w-90s	Physical Science	I	MTWThF	166Ph			Mr. Vaughan and others	
	(88f limited to 200)							
101f-102w-103s	Human Biology I, II, III							
	(Limited to 250)	VI	MWF	101WeH			Dr. Potthoff	
110f-111w-112s	Introduction to the Mathematics of Business	IV	MWF	101WeH			Miss Carlson	
119f-120w-121s	Art Today							
	(Limited to 25 in each section)							
	Sec. 1	Lecture	I	TTh	Bot. Aud.		} Mr. Faulkner, Miss Fisher	
		Laboratory	VI-VII	TTh	301WeH			
	2	Lecture	I	TTh	Bot. Aud.			
		Laboratory	III-IV	WF	301WeH			
	3	Lecture	I	TTh	Bot. Aud.			
		Discussion	II-III	TTh	306WeH			
	4	Lecture	I	TTh	Bot. Aud.			
		Discussion	III-IV	WF	306WeH			
122f-123w-124s	Music Today	VII-VIII	MW	306AWeH			Mr. Hill	
125s	Piano Playing for Pleasure	Hr. and rm. to be ar.					Mrs. Twitchell	
127w-168s	Film and Drama							
	Sec. 1	VIII-IX	T	Mu. Aud.			} Mr. Faulkner, Mr. Kissack, Mr. Hill, Mr. Weaver	
		VI	Th	306WeH				
	2	VIII-IX	T	Mu. Aud.				
		VIII	Th	306WeH				
		VIII	Th	306WeH				

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128s	Introduction to Philosophy	II	MWF	Rm. to be ar.	Mr. Everett
129f	Survey of Recreation Activities.....	VI	TTh	214CH	Mr. Haislet
134f-135w-136s	Vocational Orientation I, II, III.....	VII	MW	206WeH	} Mr. Hahn, G. C. faculty
	(Limited to 90)				
134w-135s	Vocational Orientation I, II	I	TTh	206WeH	} G. C. faculty
	(Limited to 90)				
140f-141w-142s	Individual Study and Research.....				
160f-161w-162s	Photography	VI, VII, VIII	MW	Rm. to be ar.	Mr. Nestler, Mr. Vaughan
	(Limited to 12)				
163f-164w-165s	Home Landscaping and Gardening	VIII	MWF	4Bot	Mr. Phillips
				1 hr. lab to be ar.	

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The Bulletin
of the University of
Minnesota

School of Nursing
Announcement for the Year
1938-1939



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UNIVERSITY CALENDAR

1938-39

Fall Quarter

1938			
September	12	Monday	Extension registration first semester begins
September	15	Thursday	Payment of fees closes, except for new students ¹
September	19	Monday	Entrance tests
September	19-20		Registration for Freshman Week for all new students entering the freshman class
September	19-23		Physical examinations
September	20-23		Registration period, ² College of Science, Literature, and the Arts
September	21-24		Freshman Week
September	22-23		Registration days ² for all colleges not included above
September	23	Friday	Payment of fees for new students closes ¹ at 4:30 p.m.
September	26	Monday	Fall quarter classes begin 8:30 a.m. ³ First semester extension classes begin ⁴
October	1	Saturday	Last day for extension registration without penalty
October	15	Saturday	Homecoming Day
October	20	Thursday	Senate meeting, 4:30 p.m.
November	5	Saturday	Dad's Day
November	8	Tuesday	Election Day; a holiday
November	11	Friday	Armistice Day Convocation
November	24	Thursday	Thanksgiving Day; a holiday
December	1	Thursday	State Day Convocation
December	15	Thursday	Senate meeting, 4:30 p.m.
December	12-17		Final examination period
December	15	Thursday	Commencement Convocation
December	17	Saturday	Fall quarter ends, 6:00 p.m.

Winter Quarter

December	22	Thursday	Payment of fees closes for all students in residence fall quarter ¹
1939			
January	3	Tuesday	Entrance tests
January	3-4		Registration ² and payment of fees ¹ for new students in all colleges
			Registration and payment of fees close at 4:30 p.m., January 4
January	5	Thursday	Winter quarter classes begin 8:30 a.m. ³
January	23	Monday	Extension registration second semester begins
February	4	Saturday	First semester extension classes close
February	6	Monday	Second semester extension classes begin ⁴
February	10	Friday	Last day for extension registration without penalty

February	13	Monday	(Sunday, February 12, Lincoln's Birthday); a holiday (except for extension)
February	16	Thursday	Charter Day Convocation Senate meeting, 4:30 p.m.
February	22	Wednesday	Washington's Birthday; a holiday (except for extension)
March	20-25		Final examination period
March	23	Thursday	Commencement Convocation Payment of fees closes for all students ¹ in residence winter quarter
March	25	Saturday	Winter quarter ends, 6:00 p.m.

Spring Quarter

March	31	Friday	Entrance tests
Mar. 31, Apr. 1			Registration ² and payment of fees ¹ for new students in all colleges Registration and payment of fees close at 12 m. on April 1
April	3	Monday	Spring quarter classes begin, 8:30 a.m. ³
April	7	Friday	Good Friday; a holiday (except for extension)
May	6	Saturday	Mother's Day
May	11	Thursday	Cap and Gown Day Convocation
May	18	Thursday	Senate meeting, 4:30 p.m.
May	30	Tuesday	Memorial Day; a holiday
June	2	Friday	Second semester extension classes close
June	11	Sunday	Baccalaureate service
June 9-10 and 12-16			Final examination period
June	16	Friday	Spring quarter ends, 6:00 p.m.
June	17	Saturday	Sixty-seventh annual commencement

Summer Session

June	19-20		Registration, first term
June	21	Wednesday	First term Summer Session classes begin 8:00 a.m.
July	4	Tuesday	Independence Day; a holiday
July	27	Thursday	Commencement Convocation
July	28	Friday	First term closes
July	31	Monday	Registration and payment of fees for second term close at 4:30 p.m. Second term classes begin 8:00 a.m.
September	1	Friday	Second term closes

¹ New students must pay fees on dates announced for registration. Fees of graduate students are due one week after their registration is approved by the dean of the Graduate School.

² Registration subsequent to the date specified will necessitate the approval of the college concerned. See also late fees for late registration, page 55, Bulletin of General Information. No student will be allowed to register in the University after one week from the beginning of the quarter excepting in unusual cases wherein special circumstances shall justify the appropriate committee of the college concerned permitting registration at a later date.

³ First hour classes begin at 8:15 a.m. at University Farm.

⁴ This date does not refer to correspondence study courses, which may be started at any time during the year.

FACULTY

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Lucile Petry, R.N., M.A., Assistant Professor of Nursing
Myrtle P. Hodgkins, R.N., B.A., Assistant Professor of Nursing
Frances M. Lucier, R.N., B.S., Instructor in Nursing
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Julia M. Miller, R.N., B.S., Superintendent of Nurses (c) and Assistant Pro-
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Thelma Dodds, R.N., Superintendent of Nurses and Instructor in Nursing
(b)
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Mabel Netz, B.S., Instructor in Dietetics (a)
Eva Gregerson, Instructor in Dietetics (b)
Eileen Hanson, R.N., B.S., Instructor in Dietetics (c)
Emma Einerson, R.N., B.S., Instructor in Nursing (Glen Lake Sanatorium)
Eva Burggren, R.N., Assistant (b)
Emma Fischer, R.N., Assistant (c)
Agnes Fleming, R.N., Assistant (a)

* The letters in parentheses indicate the particular hospital in which the instructor serves: (a) University of Minnesota Hospitals; (b) Charles T. Miller Hospital; (c) Minneapolis General Hospital.

Marion Gere, R.N., Assistant (c)
Helen McHale, R.N., Assistant (b)
Dorothea Etter, R.N., Assistant (c)
Alice Turner, R.N., Assistant (c)
Alma Jurgens, R.N., Assistant (c)
Dorothy Petsch, R.N., Assistant (c)
Lois Heiberg, R.N., Assistant (c)
Ella Smitka, R.N., Assistant (a)

COMMITTEES

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Margaret G. Arnstein, R.N., M.A., Assistant Professor of Preventive Medi-
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Hospital

STUDENTS' WORK COMMITTEE

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Julia M. Miller, R.N., B.S., Superintendent of Nurses, Minneapolis General
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Thelma Dodds, R.N., Superintendent of Nurses, Charles T. Miller Hospital
Ruth E. Boynton, M.S., M.D., Associate Professor of Preventive Medicine
and Public Health
Anne D. Blitz, M.A., LL.D., Dean of Women
Edward E. Nicholson, M.A., Dean of Student Affairs

ADVISORY COMMITTEE

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F. E. Harrington, M.D., Superintendent of the Minneapolis General Hospital
Peter D. Ward, M.D., Superintendent of the Charles T. Miller Hospital
Administrative Committee
Students' Work Committee

GENERAL INFORMATION

HISTORICAL STATEMENT

The University of Minnesota School of Nursing, authorized by the Board of Regents October 1, 1908, was actually established March 1, 1909, as a result of the efforts of Dr. Richard Olding Beard. It was the first university school of nursing in the world and, as such, led the way for other university schools which followed. The first university school carried a three-year undergraduate curriculum leading to the degree of graduate in nursing until June 9, 1919, at which time it established a five-year program leading to the degree of bachelor of science and graduate in nursing. Since that time it has carried both a three- and a five-year curriculum, and, up to January 1, 1938, has graduated 1,368 with a diploma in nursing, of which 187 have also received a bachelor of science degree. A distinctive feature of the five-year course has been the requirement of seventy-five university credits before the student matriculates in the School of Nursing proper. As a result, the entire clinical program is made more meaningful than would otherwise be possible.

Another first step was taken December 14, 1920, when the plan of a central school was approved by the University. From the beginning, the University had felt that it should offer the courses it was developing for its own nursing students to other hospitals. The hospitals wishing to take part in such a venture were the Minneapolis General Hospital, the Charles T. Miller Hospital, and the Northern Pacific Beneficial Association Hospital of St. Paul. It was felt that the inclusion of these hospitals would introduce desirable practice fields for the University School of Nursing and would make possible a uniform standard of preparation for the nurses in these hospitals of a higher level than they could achieve individually. The arrangements were completed, therefore, in 1921. Tho no formal contract was made, a memorandum of agreement was drawn and agreed upon by the University and the allied hospitals. On March 30, 1921, the first students in this central school of nursing were admitted to the University.

On February 19, 1925, the curriculum of clinical experience was further enriched by means of an agreement with the Hennepin County Sanatorium Commission whereby university nurse students were to receive six weeks' clinical experience at the Glen Lake Sanatorium in the care and treatment of tuberculous patients.

On January 1, 1933, the Northern Pacific Beneficial Association Hospital arranged to staff its entire nursing service with graduate nurses and subsidiary workers, thereby aiding in the problem of unemployment among graduate nurses.

Beginning March, 1934, all students in the School of Nursing have had six weeks' field experience in public health nursing in what is now known as the Community Health Service in Minneapolis and the Family Nursing Service in St. Paul.

Since June, 1934, the Charles T. Miller Hospital has accepted no freshman students for assignment in that hospital. It has instead replaced freshman students with graduate nurses and subsidiary workers, and has given experience in nursing the private patients to all students of the school.

Beginning March, 1938, trial was made of having three-year students who come directly from high school, together with all three-year students who have less than seventy-five college credits, *enter in the fall quarter only*. Five-year students, together with all three-year students who have seventy-five or more college credits (with one honor point per credit) are admitted to the School of Nursing in both fall and spring quarters.

From its inception, the school has maintained high standards for the professional and personal preparation of its students and for the nursing care of patients in its charge. Graduates of the school have made fine contribution not only to their own school, but also to the profession of nursing both in this country and abroad.

The earlier years of the school's existence were devoted to the establishment of this new type of university education while the later ones have been used for the perfecting of the plan made necessary by the merging of the University with other schools of nursing. Future years should see continued utilization of these early foundations with increasing emphasis on the preventive phases of the nurse's preparation that she may continue to meet adequately the ever increasing and ever broadening demands made upon her.

ORGANIZATION

The School of Nursing functions in the field of medical sciences, the director of the school being responsible to the dean of medical sciences. The administration of the school is conducted largely through three committees, as follows:

1. The Administrative Committee (see page 5), decides all matters of educational policy and general conduct of the School of Nursing.
2. The Students' Work Committee (see page 5), determines the policy as regards the individual student, her acceptance into the school, continuance, discipline, etc.; and makes recommendations concerning the general conduct of the school.
3. The Advisory Committee (see page 5), composed of the Administrative Committee, the Students' Work Committee, and the superintendent or executive officer of each associated hospital, decides matters involving the expenditure of hospital funds.

UNIVERSITY PRIVILEGES

Nurse students enjoy the same university privileges as do other students in so far as their nursing practice will permit. They have representation in such student groups as the All-University Student Council and, in the case of five-year students, are eligible for membership in honorary and social societies. There are two nursing societies, one open to five-year students and the other open to both five- and three-year students.

Nurse students have free access to the University Library which is located in the main quadrangle of the University. In this library are about 1,000,000 volumes of books and some 10,000 current serials. The nursing library proper is located on the second floor of the building as a part of the biological-medical library. Library hours are from 8:00 a.m. to 10:00 p.m. on week days.

Shevlin Hall, the center of women's activities on the campus, is open to nurse students as to others. Its recreation rooms are frequently reserved by the nurses for parties, dances, or entertainments.

Nurse students are entitled to make use of university tennis courts, golf course, gymnasium, and swimming pool and may buy student tickets at reduced rates for all athletic events.

The Y.W.C.A. of the University is open to all women students as are the student religious organizations sponsored by churches of different denominations.

Perhaps the greatest privilege accorded the students is that of attending lectures and concerts in the University either free or at markedly reduced student rates. Among these are the symphony concerts given by the Minneapolis Symphony Orchestra in the Cyrus Northrop Auditorium; the University Artists Course; and the Thursday morning convocation lectures as well as special lectures in the various departments. Student dramatic organizations present several worth-while plays on the campus each year.

SCHOLARSHIPS, LOANS, PRIZES

Students in either the five- or three-year course are eligible, after two quarters of satisfactory work in the University, to apply for loans from the university loan funds. Graduate nurses working for degrees are also eligible for the loan after two quarters of satisfactory work. For information regarding the loans see bulletin "University Aids for Student Expenses."

The following special awards are made to students in the graduating classes of the School of Nursing:

LOUISE M. POWELL PRIZE

A gift of \$50 annually from the Alumnae Association of the School of Nursing for the establishment of the Louise M. Powell Prize of \$25 to be awarded to that member of the March and June graduating classes in the School of Nursing of the University of Minnesota who has attained the highest degree of efficiency in practical work.

MARION L. VANNIER SCHOLARSHIP

A gift of \$100 annually from the Nurses' Self-Government Association of the University of Minnesota for the establishment of the Marion L. Vannier Scholarship. The recipient of this scholarship must be a graduate of the School of Nursing of the University of Minnesota. The scholarship is to be used for the purpose of higher education only, within two years after recipient's graduation.

RICHARD OLDING BEARD LOAN FUND

The alumnae of the school have made available through the Endowment Fund a sum of \$150 to be used as a loan to graduates of the school for further academic study. The recipient must have had one year of successful nursing experience following graduation.

ALPHA TAU DELTA SCHOLARSHIP

The Alpha Tau Delta, national scholarship society of the five-year nursing course, grants an annual scholarship of \$100 in honor of Esther M. Thompson, class of 1925, to a senior member of the Alpha Tau Delta ranking high in theoretical and practical work. This scholarship is awarded for purposes of study within two years after graduation.

MINNESOTA LEAGUE OF NURSING EDUCATION LOAN FUND

The Minnesota League of Nursing Education has made available the sum of \$500 to be used as a loan to qualified graduate nurses for the purpose of further academic study.

MAINTENANCE SCHOLARSHIPS

A limited number of maintenance scholarships for the first quarter in the School of Nursing (equivalent to \$115) are available to qualified college graduates.

OTHER SCHOLARSHIPS AND LOAN FUNDS

Many of the district and state nursing associations have established scholarships and loan funds for graduate nurses wishing to take up university work. Certain graduate nurses are also eligible for scholarships of the national nursing organizations.

NURSES' RESIDENCES

Nurse students are housed in the various hospital residences during their period of clinical experience (nursing practice). The Charles T. Miller Hospital has an attractive residence housing 135 persons, all in single rooms. The University of Minnesota Hospitals houses its students in the Louise M. Powell Hall built near the University of Minnesota Hospitals on ground overlooking the Mississippi River. This building houses approximately 300 persons. Students at the Minneapolis General Hospital have a residence adjoining, but apart from, the hospital. The students take their meals in the nurses' dining rooms which are under the direction of qualified dietitians. Each residence has a qualified director in charge.

Students in the five-year curriculum provide their own maintenance during the first six quarters. They may secure rooms in Sanford Hall (the women's dormitory) or in approved rooming houses near the University by request to the Housing Bureau, Shevlin Hall, University of Minnesota. During the time that students carry clinical experience in the school they have maintenance provided for them in the various hospital nursing residences. In the last three quarters of combined academic and nursing work

they provide their own maintenance as in the first six quarters. Students in the three-year curriculum provide their own maintenance during the first quarter on the same basis as the five-year students. They have maintenance provided in the various hospital residences after the first quarter.

Assignment of students in the five- and three-year curricula for residence in the various hospitals is made by the Students' Work Committee. Approximately one half of the students are assigned by the committee for residence in the Minneapolis General Hospital for the major portion of the course, the other half being assigned to the University of Minnesota Hospitals.

Students in affiliating and postgraduate curricula are provided maintenance in the nurses' residences during their period of enrolment in the school.

The rules governing the residences are made in accordance with university policies and carried out with the joint approval of the faculty of the School of Nursing and the Council of the Nurses' Self-Government Association.

STUDENT ACTIVITIES

The leading student organization of the School of Nursing is the Nurses' Self-Government Association. This organization assists the faculty in practically all such student affairs as pertain to off duty hours. Nurse students are admitted to membership at the end of the first six months in the school by passing an examination, conducted by the association, on their constitution, a copy of which is furnished every student when she enters. Students continue in membership so long as they remain in good standing in the school and pay the nominal dues of the organization. They elect a president and governing council of officers so chosen that there are representatives of the council in each of the hospitals. This organization usually sends a representative to the meetings of the American Nurses' Association, the National League of Nursing Education, and the Minnesota Registered Nurses' Association.

One of the activities of the student government is to appoint upper classmen to act as "big sisters" for all entering students to assist them in adjusting themselves to their new environment.

The hospitals have frequent informal teas and parties for the students and the students themselves are encouraged to plan any form of recreation which interests them and that can be wisely undertaken in addition to their nursing duties.

The school is nonsectarian tho students are urged to form church affiliations in accordance with their choice and custom. Churches of various denominations are within walking distance of the residences so that it is possible for all students to attend either morning or evening service.

Affiliating and postgraduate students are urged to participate in student activities. Both of these groups make "big sister" appointments to assist incoming students. The postgraduate students have a form of organization for their group.

ORIENTATION PROGRAM

A definitely planned orientation program for freshman students has been developed and is carried on under the direction of a member of the faculty.

SCHEDULE OF HOURS

During the first quarter in the School of Nursing proper, regular undergraduate students carry approximately twenty-four hours of class but have no practical experience in the nursing care of patients.* With the beginning of the second quarter they receive approximately nineteen hours of clinical experience weekly and carry approximately an average of nineteen hours of class.* From the beginning of the third quarter and throughout the remainder of the two and one-half years (in the case of three-year students, three years) the hours of clinical experience are in almost all instances forty-two to forty-five per week. The hours of class during this same period are approximately six per week with the exception of the Summer Session when the class program is either reduced or omitted. Except in the case of emergencies, the time of the students on full-time duty does not exceed a seven-hour day or an eight-hour night. Assignment of night duty for regular students is for approximately two months (of not more than one month consecutively) during the entire period in the school.

Affiliating students carry forty-five hours per week of clinical experience (as do the undergraduate students) and from four to six hours of correlating class work.

Hour of duty—thirty per week during approximately nine months and forty-eight per week during approximately three months—permit the postgraduate student to carry a fairly heavy class schedule during nine months but to be free of classes during three months in which time she has experience in administration.

VACATION

Five-year students have vacations as do other university students during their first five quarters and during the last three quarters. During their hospital residence they receive approximately nine weeks of vacation at their own living expense. Students entering at the beginning of the fall quarter will have approximately one to two weeks at Christmas time, two weeks during the succeeding summer, four weeks the following summer, and two weeks during the last summer. Students entering at the beginning of the spring quarter will have approximately two weeks the first summer, four weeks during the second summer, and two to four weeks during the third year.

Three-year students have practically the same vacation as do the five-year students in their period of hospital residence.

Affiliating students enrolled for less than one year and postgraduate students receive no vacation.

Affiliating students enrolled for one year receive two weeks' vacation.

* Five-year students usually have fewer class hours because of having carried certain required courses during the prenursing period.

SUGGESTED HIGH SCHOOL SUBJECTS

Students in high school who are considering the study of nursing are required so to arrange their high school subjects that they meet the entrance requirements of the College of Science, Literature, and the Arts of the University of Minnesota whether they elect the five- or three-year curriculum. By meeting these requirements, students who take the three-year course may later apply their credits in nursing toward a Bachelor's degree, a privilege not open to students who meet only the minimum university requirements.

In the matter of elective subjects students should choose subjects in which they are particularly interested, with the guidance of high school advisers. It is well to avoid "vocational units" so far as possible. Students are advised to take chemistry in high school. *Mathematics is desirable as it is essential that the students have a good working knowledge of arithmetic.* English, history, physics, and social sciences, are all recommended, and a foreign language, provided two units can be completed.

PREPARATION AND OPPORTUNITIES

The profession of nursing entails much the same type of requirements and preparation for successful practice as do other professions. Positions for graduate nurses are now open in every field and for positions requiring advanced preparation it is extremely difficult to find well-qualified personnel. To the good student who is willing to prepare herself rightly, many satisfying opportunities are open in the various fields. Some of these opportunities are for the positions of general duty, head nurse, supervisor, instructor, private duty, industrial nurse, visiting nurse, infant welfare nurse, and school nurse. Graduates of the School of Nursing now hold important positions in all these fields both in this and in foreign countries.

GENERAL REGULATIONS

NOTE.—Due to the social and economic conditions, the University of Minnesota reserves the right to alter any program or policy outlined in this bulletin.

ADMISSION

Each student who wishes to enter the University, either as a freshman or with credits from another institution, must fill out the information called for on pages 1 and 2 of the official application blank. This blank can be obtained from the registrar or from any Minnesota state high school.

The applicant for admission from high school should then give the application blank to the high school principal or superintendent with the request that it be completed and forwarded to the registrar of the University.

The applicant for admission from another college may send the information on pages 1 and 2 direct to the registrar, and in addition, she should request the college last attended to forward to the University of Minnesota an "official transcript of record" and an "honorable dismissal."

The applicant for admission by examination should submit the information on pages 1 and 2 direct to the registrar who will issue an authorization for the entrance examination.

ADMISSION FROM HIGH SCHOOL

Admission to the freshman class is either by examination or by certificate.

Most students entering the freshman classes of the University are high school graduates. In order to enter without entrance examinations the applicant must be a graduate of an accredited high school of Minnesota, or of a high school on the approved list of some other recognized state or regional accrediting institution.

For admission to any college of the University which accepts students without preliminary college training an applicant must present a record of at least twelve units completed in Grades X, XI, and XII (senior high school). For definition of units and groups see the Bulletin of General Information, pages 34 to 39.

At least nine of these twelve units must be subjects listed in Admission Groups A, B, C, D, and E. The other three units may be in Group F.

The nine units from Admission Groups A, B, C, D, and E must include a major and two minors, or preferably, two majors and one minor from at least three different admission groups.

Either one major or one minor must be in Admission Group A (English).

From either Admission Group B (foreign languages) or Admission Group D (mathematics) *but not from both*, one unit completed in Grade IX may be used to make a major or a minor. If this is done, however, the

unit completed in Grade IX may not be counted as a part of the minimum of twelve units required from Grades X, XI, and XII.

In addition to the above requirements, the individual colleges have specified certain group and subject-matter requirements. Those for the School of Nursing are as follows:

Major in Group A

Major or minor in Group D

Major or minor in Groups B, C, D, E

Those for the College of Education special curricula (required for graduate nurses working for the B.S. degree in nursing education or public health nursing) are as follows:

Major in Group A

Major or minor in each of two of the Groups B, C, D, E

ADMISSION BY EXAMINATION

Applicants who are not graduates of accredited high schools may meet the admission requirements in one of the following ways:

1. By presenting Minnesota State High School Board certificates in the necessary subjects;
2. By presenting similar certificates from examining boards of other states;
3. By presenting certificates representing examinations given by the College Entrance Board; or
4. By passing successfully the University of Minnesota entrance tests as described below.

UNIVERSITY OF MINNESOTA ENTRANCE TESTS

These tests may be taken by any high school graduate whose high school credits do not meet the special requirements of the college she wishes to enter.

They may be taken also by any individual who is not a high school graduate provided she is nineteen years of age or older.

Any applicant who passes these tests will be admitted provisionally subject to one year of satisfactory work at the University.

Most graduates of Minnesota high schools will have taken these tests in connection with the state testing program conducted in the high schools throughout the state each year.

Special tests will be required as supplementary evidence of ability to carry the work in the School of Nursing in the case of students with low entrance ratings.

In order to take the tests at the University, the official application blank should be filed with the registrar according to the instructions on page 13.

Detailed information as to where and when to report for the tests and an authorization for the tests will then be forwarded.

In special cases, arrangements will be made to have the tests given near the applicant's home in order to save the expense of travel to the University. In such cases a \$5 fee is charged. There is no fee if the tests are taken at the University.

These tests are of the objective type, intended to measure aptitudes for college work rather than specific information in high school fields. No special preparation for the tests is practicable.

Each applicant for admission by means of the university entrance tests will be required to take the college aptitude test and an English placement test.

REGULATIONS GOVERNING ADMISSION

Applications for admission should be made in writing to the registrar, University of Minnesota. Information and application blanks can be had upon request to the registrar. *Application blanks and educational credentials must be on file in the registrar's office before the applicant can be given consideration.*

Final acceptance is made at a meeting of the Enrolment Committee of the School of Nursing at which time the general fitness of the applicant for the field of nursing is considered. The committee reserves the right to reject any candidate who seems to the faculty unsuited for the nursing profession. Meetings of the committee are held at the beginning of the fall and spring quarters, at which time students are admitted to the school, *students with 75 or more college credits being admitted in the spring and fall, students with less than 75 college credits being admitted only in the fall.* Applicants may meet the committee at its meeting six months prior to the date they intend to enter, if they wish, but ordinarily they meet the committee on the date they wish to enter the school. Every precaution is taken to warn applicants in advance if their records seem to indicate that they are not suited to enter the field of nursing. A battery of tests is given during registration week and scores are used for assistance in guidance throughout the course. *A test covering mathematical processes involved in nursing is given during registration week and students whose background is insufficient are required to furnish evidence of study of this subject and to pass a second examination at the end of the quarter.* A sample of this test may be sent upon request.

FIVE-YEAR CURRICULUM

Applicants for admission to the five-year curriculum must meet the entrance requirements of the College of Science, Literature, and the Arts, as given on page 35 of the Bulletin of General Information. They will register in the College of Science, Literature, and the Arts during the first five quarters of the curriculum.

Acceptance into the School of Nursing is not made until the 75 credits of the prenursing subjects have been completed (see outline of the five-year curriculum, page 23. Students who have taken work in junior colleges, other colleges, or universities, may apply the credits toward the five-year curriculum. Official transcripts of such credits should be submitted to the university registrar for evaluation. Students may begin the prenursing portion of the five-year curriculum at the beginning of any quarter, altho the fall quarter is the most satisfactory admission date. The spring quarter is the most satisfactory time to begin the nursing curriculum and applicants

having completed 75 or more college credits whether or not they are enrolled in the five-year curriculum are urged to begin the nursing curriculum at this time.

THREE-YEAR CURRICULUM

Applicants for admission to the three-year curriculum must meet entrance requirements as stated on page 13. Students whose high school records were not good are not advised to enter the field of nursing. In considering the applicants the Enrolment Committee gives preference to those students who ranked in the upper fourth of their high school class. For requirements of physical fitness see Health Regulations, page 20.

To be eligible for registration in the state of Minnesota the nursing school graduate must be twenty-one years of age. Therefore, applicants under eighteen years of age are especially urged to elect the five-year curriculum.

THREE-YEAR CURRICULUM FOR COLLEGE GRADUATES

The state law of Minnesota (as that of many other states) requires the nursing curriculum to be three years in length. Applicants with a Bachelor's degree are admitted directly to the nursing portion of the five-year curriculum and are eligible for special electives during six months of the third, or senior, year. The student may use this time in working toward a degree of bachelor of science in the field of nursing education or of public health nursing, or she may begin work toward a more advanced degree. She may, also, if she desires, spend this period in some special field such as that of psychiatric nursing or outpatient nursing in this or other schools.

DEGREE CURRICULUM FOR GRADUATE NURSES

Applicants for admission to this course must meet the entrance requirements of the College of Education special curricula (see page 14) and submit evidence of graduation from an accredited school of nursing.

POSTGRADUATE CURRICULA

Applicants for admission to postgraduate courses must be graduates of accredited schools of nursing and meet the minimum entrance requirement for admission to the University of Minnesota, as described below. They should write to the registrar, University of Minnesota, for application blanks. These should be filled out and placed on file in the registrar's office at least one month in advance of the quarter in which the applicant wishes to enter.

Postgraduate students are admitted each quarter in the operating room; fall and winter quarters in medical nursing; fall and spring quarters in communicable disease, obstetric, pediatric, and surgical nursing. They usually enter one week before each regular university registration day in order that adjustment to clinical experience in the hospital may be made before university classes begin. Only a limited number of applicants may be accepted in any one quarter.

Proper blanks on which the nursing school credits and high school credits should be sent in can also be had by request to the registrar, University of Minnesota.

COURSES FOR AFFILIATING STUDENTS

By special arrangements with other schools of nursing approved by the State Board of Nurse Examiners, students from these schools are admitted at stipulated times for additional experience and instruction. Such students must meet the requirements of their own school, and must meet also the requirements of high school graduation or its equivalent.

ADMISSION WITH ADVANCED STANDING

Students with partial completion of a full college course are advised to bring their qualifications to those of the five-year curriculum. Since the state law requires that the nursing curriculum be three years in length, it is not possible to shorten the period of three years for students entering with previous college credit. For required courses, however, in which they have already received credit they may, after admission to the school, make substitution of desired electives.

ADMISSION FOR TRANSFERRING STUDENTS

It is not the policy of the School of Nursing to accept students wishing to transfer from other schools of nursing. In almost every case the first two quarters must be repeated and a great deal of time is lost for the student in transfer.

ESTIMATE OF EXPENSES OF NURSING SCHOOL CURRICULUM

Five-year Curriculum

Tuition fee.—During the first five quarters the student is registered in the College of Science, Literature, and the Arts for which the tuition fee is twenty dollars (\$20)‡ each quarter. Registration for the sixth quarter is in the School of Nursing with tuition fee of twenty-five dollars (\$25).‡ During the fifth year the student is registered in the College of Education with tuition fee of twenty dollars (\$20)‡ each quarter. While the student is in hospital residence, there is no tuition fee.

Total tuition fee \$185.00

Incidental fee.—An incidental fee of six dollars (\$6) a quarter is charged each student, for which the student receives the privileges of Shevlin Hall, the Health Service, the *Minnesota Daily*, including the Official Daily Bulletin, the university post-office service, and the *University Address Book*. These privileges are received by students of this curriculum for six quarters preceding the period of hospital residence and three quarters during the fifth year.

Total incidental fee \$54.00

‡ For nonresidents of Minnesota, tuition fee is \$40.

Matriculation deposit.—At the student's first registration at the University a matriculation deposit of five dollars (\$5) is required to cover the following charges: locker rental, locker key deposit, laboratory breakages, library fines, or damages to university property.

Laboratory deposit.—A laboratory deposit of five dollars (\$5) is also required of students registered for courses in chemistry to cover cost of materials.†

Special test fee.—One dollar (\$1).

Cost of books.—The expense varies with the courses taken. Two- and three-quarter courses often require the purchase of only one book at the beginning of the course. Secondhand books can often be purchased at one of the various book stores. Approximate annual cost of \$35 for the first two years and approximately \$12 for each of the last three years should represent maximum book expenses.*

Cost of uniforms.‡—The student pays for her cape and for her first complete set of uniforms. The hospital replaces worn out uniforms. This charge of approximately sixty dollars (\$60) is payable at the end of the first month of the sixth quarter at the University when the order is sent to the manufacturer. If the student cancels registration before entering the hospital arrangements are made for the resale of the uniform at only a slight loss to the original purchaser.

Total uniform expense..... \$60.00‡

Students may purchase uniforms second hand but cannot have replacement by hospital until such time as sets of new uniforms purchased by classmates require replacement.

Students should provide themselves with name tapes for all pieces which are to be laundered at the time uniforms are purchased. One hundred tapes should be sufficient. They may be purchased through the office of the School of Nursing.

Miscellaneous expense.—This item of \$35 includes transportation while in the School of Nursing to and from classes at the University and to and from the field when assigned to public health nursing.

Graduation fees.—The student registered in the five-year curriculum receives a diploma in nursing and a bachelor of science degree in education. The fee for each of them is \$7.50.

Total graduation fee..... \$15.00

Board and room.—Those students who live within commuting distance do not have this expense since they can live at home during the periods when they are not in hospital residence. There is no charge for board and room while in residence at the hospital. The cost of room and board varies widely.

* Altho sale of textbooks is not recommended it is one method of reducing this expense.

† For detailed information see Bulletin of General Information, page 54.

‡ Those students who elect public health nursing as their field of major interest in the fifth year pay approximately \$50 in addition for public health uniforms and coat.

Sanford Hall,† residence hall for women, \$95 to \$120 depending upon the room selected, per quarter.

Co-operative cottages,† in which the students assist with work, \$60 to \$65 per quarter.

Rooming houses† (varies) for room per month, \$12 to \$15; for board, per week, \$6 to \$7 for two meals per day.

Some students earn their room and board in return for services given in private families.

Those who plan to earn part of their expenses may receive information from the Employment Bureau, Room 9 Administration Building, University of Minnesota.

Affiliating students pay no tuition and complete maintenance is furnished them. Books amount to about \$20 for the year. Personal expenses can be determined best by the individual student.

For fee in postgraduate curricula see page 34.

Three-year Curriculum

Tuition fee.—For the first quarter's work in the School of Nursing the tuition fee is \$25.‡ No tuition is charged during the period of hospital residence.

Total tuition fee.....\$25.00

Incidental fee.—This fee is the same as for students registered in the five-year curriculum* and is charged for only the first quarter.

Total fee.....\$6.00

Matriculation deposit.—Same as for students registered in the five-year curriculum.

Total fee.....\$5.00

Cost of books.—During the first quarter the cost of books is approximately \$15 as a maximum and during the remainder of the course an annual expense of \$10 would represent a maximum amount. Secondhand books can often be purchased at one of the various book stores.

Cost of uniforms.—Same as for five-year student but payable at end of first month.

Total uniform expense.....\$60.00

Miscellaneous expense.—This item of \$35 includes transportation while in the School of Nursing to and from classes at the University and to and from the field when assigned to public health nursing.

Graduation fee.

Total fee.....\$7.50

Board and room.—Those students who live within commuting distance do not have this expense since they may live at home during the first quarter but out-of-town students may find facilities in the approved rooming houses near the campus. Expenses vary from \$12 to \$15 a month for room and from \$6 to \$7 a week for board for two meals per day.

* See page 17.

† For detailed information see Bulletin of General Information pages 41 and 42.

‡ For nonresidents of Minnesota, tuition fee is \$40.

HEALTH REGULATIONS†

The University School of Nursing requests each student *before entering* to be vaccinated against smallpox and to be immunized against typhoid fever, diphtheria, and scarlet fever. Compliance with this requirement prevents the necessity of immunizing the student during her first three months which frequently involves discomfort and loss of time for the student in the period when she most needs to be at her best physically. (Detailed instructions as prescribed by the University Health Service regarding immunization may, if desired, be secured from the School of Nursing by the applicant's physician.)

Upon entrance the applicant must pass satisfactorily the physical examination given by the University Health Service. Students whose condition needs further observation may be admitted tentatively but must cancel if later findings prove them physically unfit for nursing. The increasing emphasis on maintenance of health and prevention of disease is bringing an equal demand that the nurse herself be physically fit.

All students receive in the respective hospitals an annual physical examination. In addition (a) a Mantoux test is made of all students on entrance and a chest X ray is taken in case of positive reaction. (b) One week preceding the tuberculosis service, a Mantoux test is also taken of students whose Mantoux tests were negative on entrance. All students having a positive reaction are given a chest X ray. (c) Three months after returning from the tuberculosis service, those whose Mantoux tests were negative before entering the tuberculosis service are given another Mantoux test. Those students with positive reactions receive a chest X ray at that time. A complete physical examination is given on completion of the course, including chest X ray for students having positive Mantoux reaction. Mantoux test and chest X rays are made routinely for postgraduate students on entrance only. However, any student will receive a chest X ray as often as necessary for the protection of the students and the hospitals. Through the University Health Service a special examination of feet of students is made and recommendation given for desirable types of shoes and, when indicated, for corrective foot exercises.

Students about whom it is decided that tonsillectomy or other surgery was indicated before admission to the school, or students under care of a private physician for some minor complaint which does not interfere with the practice of nursing but requires continued treatment may be asked to pay for this care at the hands of the physician or surgeon of their choice.

A regular student in the School of Nursing who is disabled by continued illness shall be referred to her home or family as soon as she may be safely discharged from the hospital and permitted to travel; and shall thereafter be eligible for reinstatement under the same rules as apply to any other student. In any case, her registration as a first year student shall be terminated at the end of thirty days; if a second year student, at the end of sixty days; and if a third year student, at the end of ninety days; and thereafter such students shall meet their own cost of hospital care on the

† The regulations given here apply to postgraduate, as well as undergraduate, students except where otherwise indicated.

same basis as regular patients under the established rules and regulations of the hospital concerned. In the case of affiliating and postgraduate students, they must meet the cost of hospital care which is in excess of one month for any one year of residence in the school.

GRADES

Students in the five-year curriculum are governed during the first five quarters by the regulations of the College of Science, Literature, and the Arts, and during the last three quarters by the regulations of the College of Education, in regard to grades, credits, honor points, and so forth. Students receive grades in accordance with the general university plan. The passing grades used are A, B, C, D, in order of excellence. A grade of I (incomplete) is given when work is not completed on time, through no fault of the student and must be made up within 30 days unless the time is extended by permission of the Students' Work Committee. A grade of E is a temporary grade which may be removed by satisfactorily passing a second examination, for which a fee of \$1 is charged. A grade of F in any class can be removed only by repeating the course. Students receiving a grade of F (failure) in any part of the clinical experience must repeat enough of the service to secure a passing grade.

CONTINUATION IN SCHOOL

Because of the complicated schedules of clinical experience it is impossible to arrange irregular class schedules for students. For that reason, no student is allowed to register for the second quarter in the School of Nursing who has not satisfactorily completed the work of the first quarter; and no student may register for the third quarter who has not satisfactorily completed the second.

The faculty of the School of Nursing reserves the right to cancel the registration of any student who seems to them unsuited for the nursing profession or to remove any student connected with the school when, in their judgment, the interest of the school requires it.

READMISSION

All students who miss more than a month of their work through illness or leave of absence will have to remain out of the school until such time as the class or clinical schedule can be adjusted to their needs. *Special permission cannot be granted students to remain away for the purpose of caring for sick relatives.*

REQUIREMENTS FOR GRADUATION

The Board of Regents of the University of Minnesota upon recommendation of the faculty of the School of Nursing, confers degrees and certificates as specified below.

BACHELOR OF SCIENCE DEGREE AND GRADUATE IN NURSING

The degree of bachelor of science and of graduate in nursing will be granted those students who have completed satisfactorily the requirements of the five-year curriculum as outlined on pages 23 to 29. They must meet all requirements for the B.S. degree before they may count the three quarters in the College of Education or in the Medical School in their senior year as contributing toward the three-year requirement for the degree of graduate in nursing. In other words, five-year students are not *eligible* for the graduate in nursing degree until they are eligible for the B.S. degree.

GRADUATE IN NURSING

The degree of graduate in nursing will be granted those students who have completed satisfactorily the requirements of the three-year curriculum as outlined on pages 30-32. See also Class Curriculum and Clinical Experience on pages 24 to 26. They must have credit for the satisfactory completion of three full years in the nursing curriculum.

Students who take the five-year curriculum but do not complete its requirements may change their status to three-year students and receive the graduate in nursing degree upon satisfactory completion of the requirements of the three-year curriculum.

Students who enter as three-year students holding a B.S. or B.A. degree before entering, may count a part of two quarters in the College of Education, Medical School, or Graduate School as a part of the three-year requirement, provided the courses they select have the approval of the Students' Work Committee of the School of Nursing.

BACHELOR OF SCIENCE DEGREE

The bachelor of science degree will be granted those graduate nurses who have completed satisfactorily the requirements for this degree as outlined on pages 23 to 29.

STATE REGISTRATION

Nurse students completing either the five- or three-year course are eligible at the age of twenty-one years to take the state board examination given by the Minnesota State Board of Nurse Examiners. Successful passing of this examination entitles the nurse to registration in Minnesota and makes her eligible for membership in her alumnae association and through her district, and state association, in the national nursing organizations and the Red Cross Nursing Service. Graduates from the University of Minnesota School of Nursing are also eligible for registration in any part of the United States.

CURRICULA

The School of Nursing administers, with the assistance of certain other schools and departments in the University, the following curricula except the one in Public Health Nursing:

1. Five-year curriculum
2. Three-year curriculum
3. Degree curriculum for graduate nurses
4. Affiliating curricula
5. Postgraduate curricula

FIVE-YEAR CURRICULUM

The five-year combined Nursing and Arts Curriculum leads to a bachelor of science degree and a degree of graduate in nursing. *Wherever possible, students should elect the five-year in preference to the three-year curriculum, because the preparation given is broader and better, and graduates of the five-year curriculum are in much greater demand than are those from the three-year curriculum.* The curriculum is planned to prepare the student not only for bedside nursing but also for administrative, supervising, and teaching positions in schools of nursing and hospitals; for such public health nursing positions as visiting nursing, school nursing, health teaching, infant welfare, rural and industrial nursing; and for combined positions in secondary schools involving both nursing and teaching.

PART I. COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

(Five quarters)

The student must complete the requirements listed below and must earn an average of one honor point per credit.

English A-B-C or Composition 4-5-6 or exemption from the requirement

Sociology 1

Psychology 1-2

Physiology 2 or 4 or 51

Physiology 2 (Elements of Physiology) has no prerequisite. Course 4 (Human Physiology) has zoology and chemistry as prerequisites. It is regularly offered in the Summer Session for those who cannot complete it during the academic year. Physiology 51 (Human Physiology) also has zoology and chemistry as prerequisites and is the preferred course.

Electives to make a total of 75 credits exclusive of physical education. (For each five honor points in excess of one honor point per credit the number 75 is diminished by one).

Recommended subjects are :	Credits
Zoology 1-2-3	10
Chemistry 1-2, or 4-5, or 6-7, or 9-10	8 or 10
Economics 1	5
History 1-2	10
History 7-8-9	9
Home Economics 30 or 32	2 or 3
Political Science 1-2	6
Preventive Medicine and Public Health 3, 4	4
Physiology 50 (preferred to Physiology 1)	5
Physiology 51 (preferred to Physiology 2 or 4)	6
Bacteriology 41 (preferred to Bacteriology 1)	5
Child Welfare 40	3
Philosophy 3	5

Physical Education, six quarters. One quarter of this requirement may be completed after registering in the School of Nursing. No credit is granted for physical education courses in the College of Science, Literature, and the Arts; but upon transfer to the College of Education, the student will receive the credits and honor points earned in those courses.

PART II. SCHOOL OF NURSING

(Ten quarters for five-year students, twelve quarters for three-year students)

Five-year students are admitted in the spring and fall quarters and remain in the School of Nursing ten quarters. Three-year students who have completed 75 or more college credits with an average of one honor point per credit, but who do not have the specific course requirements for entrance to the nursing portion of the five-year curriculum are also admitted in the spring and fall quarters, tho the preferred entrance date to the School of Nursing both for these and the five-year students is the beginning of the spring quarter. All other three-year students are admitted in the fall quarter only. All three-year students remain in the school twelve quarters (three years). Sixty credits are granted for successful completion of Part II.

CLASS CURRICULUM*

First Year—First Quarter

Required subjects are:

Course No.	Title	Class Hrs.	Lab. Hrs.	Total Hrs.	Credits
Anat. 3	Elementary Anatomy	22	22	44	3
P.M.&P.H. 3	Personal Health	22	.....	22	2
Soc. 49	Social Pathology (five-year students)	33	.....	33	3
Nurs. 1	History of Nursing (five-year students)	11	.....	11	1
Physiol. 1†	Elements of Physiological Chemistry	33	22	55	4
Physiol. 2†	Elements of Physiology	33	22	55	4
Bact. 1†	Elementary Bacteriology	33	33	66	4
Nurs. 10†	Introduction to Nutrition	11	.....	11	1
Total		198	99	297	22

* Five-year students have fewer class hours or may substitute other courses because of having carried Physiology 2 or 4 or 51 and perhaps certain others of the required courses during the pre-nursing period.

† These four courses have preferred substitutes, namely: Physiol. 50; Physiol. 51; Bact. 41 or 101; Home Econ. 30 or 32 for five-year students.

First Year—Second Quarter

Course No.	Title	Class Hrs.	Lab. Hrs.	Total Hrs.
Pharm. 8	Elementary Pharmacology	22	22	44
Nurs. 11	Foods and Nutrition	11	44	55
Nurs. 15	Nursing Arts (including metrology).....	66	22	88
Nurs. 18	Principles of Medical and Surgical Nursing	44	.....	44
Nurs. 14	Introduction to the Medical Sciences.....	22	.....	22
Total		165	88	253

*First Year—Third and Fourth Quarters**

Course No.	Title	Class Hrs.	Lab. Hrs.	Total Hrs.
Nurs. 16	Advanced Nursing Arts (including bandaging, massage, and metrology).....	33	11	44
Nurs. 19	Principles of Medical and Surgical Nursing	44	.....	44
Nurs. 41	Principles of Pediatrics and Pediatric Nursing	33	.....	33
Total		110	11	121

Second Year

Course No.	Title	Class Hrs.	Total Hrs.
Med. 15	Diet Therapy	11	11
Nurs. 1	History of Nursing (three-year students).....	11	11
Nurs. 25	Principles of Orthopedics and Orthopedic Nursing....	11	11
Nurs. 35	Principles of Communicable Disease Nursing.....	22	22
Nurs. 37	Principles of Neurology and Neurological Nursing....	22	22
Nurs. 38	Principles of Psychiatry and Psychiatric Nursing	55	55
Nurs. 39	Principles of Nursing in Conditions of the Reproduc- tive System	11	11
Nurs. 43	Principles of Obstetrics and Obstetric Nursing.....	22	22
Nurs. 48	Principles of Care in Eye and Ear Conditions.....	22	22
Total		187	187

Third Year

Course No.	Title	Class Hrs.	Total Hrs.
Nurs. 36	Principles of Tuberculosis and Tuberculosis Nursing	22	22
Nurs. 50	Survey of Professional Field†.....	22	22
Gen.Col. 2	Practical Applications of Psychology (three-year stu- dents)	66	66
Ed. 51A	Introduction to Secondary School Teaching (five-year students except those in public health nursing not desiring teacher's certificate).....	33	33
P.M.&P.H. 62	Principles of Public Health Nursing (five-year stu- dents electing Public Health Nursing).....	33	33
Total		140	140

* Slight alterations in the following program may be necessary as a result of the revision of the curriculum.

† Given for certain groups in junior year.

CLINICAL EXPERIENCE

The clinical experience of the students begins in their second quarter in the school. They are assigned to the hospitals in the school in the order of their scholarship rank during the first quarter. The hospitals in which the students receive their clinical experience are as follows:

The University of Minnesota Hospitals, situated on the University campus, include the Elliot Memorial Hospital, the Cancer Institute, the Todd Memorial, and the Eustis Children's Hospital. They are supported by state funds and endowments. They care for patients sent in from all parts of the state. The daily average of patients from July to December, 1936, was 335.

The Minneapolis General Hospital is supported by taxation, and cares principally for the indigent sick of the city of Minneapolis. It has a large number of accident and emergency cases and a wide variety of acute diseases. The daily average of patients July to December, 1937, was 466.

The Charles T. Miller Hospital, in St. Paul, has 50 beds for free patients and 150 beds for private and semi-private patients. The daily average of patients July to December, 1937, was 151.

The Hennepin County Tuberculosis Sanatorium at Glen Lake, an institution of over 700 beds, caring for all types of tuberculosis, is affiliated with the School of Nursing to give the students experience in the care of tuberculous patients. Students are assigned for this experience in the latter half of their course.

Students are rotated from one hospital to another in order to give them as complete clinical experience as the school has to offer. For instance, all students go to the Minneapolis General Hospital for experience in communicable disease nursing.

In addition, students are assigned to the Community Health Service of Minneapolis or the Family Nursing Service of St. Paul for field experience in public health nursing.

PART III. COLLEGE OF EDUCATION

(Three quarters)

NOTE.—Part III is not required for three-year students.

The student selects one of two majors:

A. Nursing Education, which has in addition to the primary pattern two variants, namely: Child Health, and Nutrition. For any one of these three the student registers in the College of Education. The primary curriculum in Nursing Education prepares for nursing in institutions, administration, or teaching in hospitals and schools of nursing. The combination (1) with

courses in Child Health (Institute of Child Welfare) prepares the nurse for work in pediatric work or clinics, work with both well and sick children, or serves as excellent background for nurses who may later seek additional preparation for public health work with children. The combination (2) with Nutrition (Home Economics) prepares the nurse for any position in which more than ordinary mastery in this field is desirable.

Major Adviser: Katharine J. Densford.

A. Nursing Education Curriculum (primary pattern)

No.	Title	Credits
Ed. 51B†	Introduction to Secondary School Teaching	3
Ed.T. 51A	Special Methods of Teaching in Schools of Nursing	3
Ed.T. 51B	Special Methods of Teaching in the School and Directed Teaching in Schools of Nursing	5
Nurs. 60	Ward Administration	4 or 8
Nurs. 69†	Survey of Conditions and Trends in Nursing	3
Nurs. 71	Curriculum Making in Schools of Nursing	3
C.W. 40§	Child Training	3
	Elective	14 or 18
	Education electives approved by adviser	3
	Total	45

Variant for those interested in Child Health:

No.	Title	Credits
Nursing Courses		
Nurs. 60	Ward Administration	4
Nurs. 69†	Survey of Conditions and Trends in Nursing	3
Nurs. 71	Curriculum Making in Schools of Nursing	3
Education Courses		
Ed.T. 51A	Special Methods of Teaching in Schools of Nursing	3
Ed. 51B†	Introduction to Secondary School Teaching	3
Nursery School Courses		
Ed.T. 55	Principles of Early Childhood Education	3
Ed.T. 56	Permanent Play Materials	2
Ed.T. 57	Plastic Materials	3
Ed.T. 58	Rhythms, Games, and Music for the Young Child	2
Ed.T. 59	Story Telling for Young Children	2
Ed.T. 75	Methods and Observation in the Nursery School	3
Ed.T. 76A,B,C	Methods and Observation	3
	Electives approved by adviser	11
	Total	45

† A qualifying examination covering courses Ed. 51A,B, and Nurs. 69 as well as examinations in English and in nursing must be passed before registering for Ed.T. 51A.

§ This course is required in Part III unless it has been previously carried in Parts I or II.

Variant for those interested in Nutrition:

Students taking this curriculum must have completed Home Economics 30, 2 cred., before entering the School of Nursing.

No.	Title	Credits
Nursing Courses		
Nurs. 60	Ward Administration	4
Nurs. 69	Survey of Conditions in Nursing	3
Nurs. 71	Curriculum Making in Schools of Nursing	3
Education Courses		
Ed.T. 51A	Special Methods of Teaching in Schools of Nursing	3
Ed.T. 51B	Special Methods of Teaching in the School and Directed Teaching in Schools of Nursing	5
Ed. 51B	Introduction to Secondary School Teaching	3
	Electives in Education approved by adviser	9
Home Economics Courses		
Agr. Biochem. 4	Introduction to Organic and Biochemistry	5
H. E. 34	Nutrition Problems	4
H. E. 170	Nutrition of the Family	3
H. E. 173	Nutrition in Disease	3
	Total	45

B. Public Health Nursing—which offers two variants:

1. Public Health Nursing (student enrolled in Medical School)
2. Public Health Nursing with addition of courses to qualify the nurse for a high school teacher's certificate in health education (student enrolled jointly in College of Education and Medical School).

Major Adviser: Public Health Nursing, Margaret Arnstein.

No.	Title	Credits
P.M.&P.H. 53	Elements of Preventive Medicine and Public Health	5
P.M.&P.H. 61	Mental Hygiene	3
P.M.&P.H. 62-63	Principles of Public Health Nursing	6
P.M.&P.H. 65	Field Practice in School Nursing	8-12
P.M.&P.H. 66	Field Practice in Rural Nursing	
P.M.&P.H. 67	Field Practice in Family Health Agency	
Soc. 90 or	Survey of Social Work	5 or 6
Soc. 91 or	Field Observation of Social Work	
Soc. 129-130	Principles of Social Case Work	
	Electives in Social Science or Child Welfare Group	3
	Courses in Social Science Group exclusive of Sociology	10
	Electives in Science Group	15
	Electives from Dept. of P.M.&P.H.	8 or more

Student wishing high school teacher's certificate in Health Education should carry the following courses in addition. It is not expected that the five-year students complete this work in three quarters:

No.	Title	Credits
Ed. 51A-B-C	Introduction to Secondary School Teaching	9
	Education electives	8
	Special Methods and Supervised Practice in Health Teaching	9

CLINICAL CURRICULUM AFTER FIRST SIX MONTHS
FIVE-YEAR CURRICULUM

FALL CLASS

Freshman Year

GROUP 1	GROUP 2	GROUP 3	GROUP 4
Title	Title	Title	Title
Surg. Nurs. 6	Surg. Nurs. 8	Surg. Nurs. 4	Surg. Nurs. 8
Oper. Room 8	Oper. Room 8	Med. Nurs. 6	Med. Nurs. 6
Vac. 2	Vac. 2	Psych. Nurs. 6	Diet K. 5
Ped. Nurs. 10	Ped. Nurs. 8	Oper. Room 8	Vac. 2
		Vac. 2	Oper. Room 5

Junior Year

Ped. Nurs. 2	Ped. Nurs. 4	Ped. Nurs. 10	Oper. Room 3
Obst. Nurs. 12	Obst. Nurs. 12	Obst. Nurs. 12	Ped. Nurs. 12
Psych. Nurs. 6	Psych. Nurs. 6	Com. Dis. 6	Obst. Nurs. 12
Com. Dis. 6	Diet K. 5	Tbc. Nurs. 4	Psych. Nurs. 6
Out-Patient 4	Com. Dis. 6	Out-Patient 4	Surg. Nurs. 4
P. H. Nurs. 6	Out-Patient 4	Gyn. Nurs. 4	Com. Dis. 6
Vac. 4	Gyn. Nurs. 4	P. H. Nurs. 6	Vac. 4
Tbc. Nurs. 4	Tbc. Nurs. 4	Vac. 4	Out-Patient 4
Pri. Pat. 6	Vac. 4	Med. Nurs. 2	P. H. Nurs. 1
Diet K. 2	Med. Nurs. 3		

Senior Year

Diet K. 3	Med. Nurs. 1	Med. Nurs. 1	P. H. Nurs. 5
Gyn. Nurs. 4	P. H. Nurs. 6	Surg. Nurs. 7	Tbc. Nurs. 4
Med. Nurs. 10	Surg. Nurs. 6	Diet K. 5	Gyn. Nurs. 4
Surg. Nurs. 8	Pri. Pat. 6	Pri. Pat. 6	Med. Nurs. 4
Vac. 1	Med. Nurs. 6	Med. Nurs. 3	Surg. Nurs. 2
Campus 26	Vac. 1	Surg. Nurs. 3	Pri. Pat. 6
(Incl. 3 wks. vac.)	Campus 26	Vac. 1	Vac. 1
	(Incl. 3 wks. vac.)	Campus 26	Campus 26
		(Incl. 3 wks. vac.)	(Incl. 3 wks. vac.)

Freshman Year

GROUP 5	GROUP 6	GROUP 7	GROUP 8
Title	Title	Title	Title
Med. Nurs. 6	Surg. Nurs. 10	Med. Nurs. 6	Surg. Nurs. 10
Surg. Nurs. 3	Med. Nurs. 8	Surg. Nurs. 10	Med. Nurs. 4
Diet K. 5	Vac. 2	Vac. 2	Diet K. 5
Vac. 2	Psych. Nurs. 6	Psych. Nurs. 6	Vac. 2
Psych. Nurs. 6		Pri. Pat. 2	Pri. Pat. 5
Oper. Room 4			

Junior Year

Oper. Room 4	Oper. Room 8	Pri. Pat. 4	Pri. Pat. 1
Ped. Nurs. 12	Ped. Nurs. 12	Diet K. 5	Surg. Nurs. 2
Obst. Nurs. 12	Obst. Nurs. 12	Oper. Room 8	Med. Nurs. 3
Com. Dis. 6	Pri. Pat. 6	Ped. Nurs. 12	Psych. Nurs. 6
Surg. Nurs. 6	Vac. 4	Obst. Nurs. 12	Oper. Room 8
Vac. 4	Com. Dis. 6	Vac. 4	Ped. Nurs. 12
Tbc. Nurs. 4	Gyn. Nurs. 4	Surg. Nurs. 4	Obst. Nurs. 12
Out-Patient 4		Com. Dis. 3	Vac. 4
			Com. Dis. 4

Senior Year

Gyn. Nurs. 4	Diet K. 5	Com. Dis. 3	Com. Dis. 2
Surg. Nurs. 5	Med. Nurs. 2	Out-Patient 4	Tbc. Nurs. 4
P. H. Nurs. 6	Surg. Nurs. 4	Gyn. Nurs. 4	P. H. Nurs. 6
Pri. Pat. 6	Out-Patient 4	Tbc. Nurs. 4	Gyn. Nurs. 4
Med. Nurs. 4	P. H. Nurs. 6	P. H. Nurs. 6	Out-Patient 4
Vac. 1	Tbc. Nurs. 4	Med. Nurs. 4	Out-Patient 3
Campus 26	Vac. 1	Vac. 1	Surg. Nurs. 2
(Incl. 3 wks. vac.)	Campus 26	Campus 26	Vac. 1
	(Incl. 3 wks. vac.)	(Incl. 3 wks. vac.)	Campus 26
			(Incl. 3 wks. vac.)

CLINICAL CURRICULUM AFTER SIX MONTHS—
THREE-YEAR CURRICULUM

FALL CLASS*†

Freshman Year

GROUP 1		GROUP 2		GROUP 3		GROUP 4		GROUP 5		GROUP 6	
Title	Wks.	Title	Wks.	Title	Wks.	Title	Wks.	Title	Wks.	Title	Wks.
Surg. Nurs.	6	Surg. Nurs.	8	Surg. Nurs.	4	Surg. Nurs.	8	Med. Nurs.	6	Surg. Nurs.	10
Oper. Room	8	Oper. Room	8	Med. Nurs.	6	Med. Nurs.	6	Surg. Nurs.	3	Med. Nurs.	8
Vac.	2	Vac.	2	Psych. Nurs.	6	Diet K.	5	Diet K.	5	Vac.	2
Ped. Nurs.	10	Ped. Nurs.	8	Oper. Room	8	Vac.	2	Vac.	2	Psych. Nurs.	6
				Vac.	2	Oper. Room	5	Psych. Nurs.	6	Oper. Room	4

Junior Year

Ped. Nurs.	2	Ped. Nurs.	4	Ped. Nurs.	10	Oper. Room	3	Oper. Room	4	Oper. Room	8
Obst. Nurs.	12	Obst. Nurs.	12	Obst. Nurs.	12	Ped. Nurs.	12	Ped. Nurs.	12	Ped. Nurs.	12
Psych. Nurs.	6	Psych. Nurs.	6	Com. Dis.	6	Obst. Nurs.	12	Obst. Nurs.	12	Obst. Nurs.	12
Com. Dis.	6	Diet K.	5	Tbc. Nurs.	4	Psych. Nurs.	6	Com. Dis.	6	Pri. Pat. §	12
Out-Patient	4	Com. Dis.	6	Out-Patient	4	Surg. Nurs.	4	Surg. Nurs.	6	Vac.	4
P. H. Nurs.	6	Out-Patient	4	Gyn. Nurs.	4	Com. Dis.	6	Vac.	4	Com. Dis.	4
Vac.	4	Gyn. Nurs.	4	P. H. Nurs.	6	Vac.	4	Tbc. Nurs.	4		
Tbc. Nurs.	4	Tbc. Nurs.	4	Vac.	4	Out-Patient	4	Out-Patient	4		
Pri. Pat. §	8	Vac.	4	Med. Nurs.	2	P. H. Nurs.	1				
		Med. Nurs.	3								

Senior Year

Pri. Pat. §	4	Med. Nurs.	1	Med. Nurs.	1	P. H. Nurs.	5	Gyn. Nurs.	4	Com. Dis.	2
Diet K.	5	P. H. Nurs.	6	Surg. Nurs.	7	Tbc. Nurs.	4	Surg. Nurs.	5	Gyn. Nurs.	4
Gyn. Nurs.	4	Surg. Nurs.	6	Diet K.	5	Gyn. Nurs.	4	P. H. Nurs.	6	Diet K.	5
Med. Nurs.	10	Pri. Pat. §	12	Pri. Pat. §	12	Med. Nurs.	4	Pri. Pat. §	12	Med. Nurs.	2
Surg. Nurs.	8	Med. Nurs.	6	Med. Nurs.	3	Surg. Nurs.	2	Med. Nurs.	4	Surg. Nurs.	4
Med. Nurs.	9	Surg. Nurs.	10	Surg. Nurs.	3	Pri. Pat. §	12	Surg. Nurs.	10	Out-Patient	4
Surg. Nurs.	10	Med. Nurs.	4	Med. Nurs.	9	Med. Nurs.	9	Med. Nurs.	9	P. H. Nurs.	6
Vac.	2	Vac.	2	Surg. Nurs.	10	Surg. Nurs.	3	Vac.	2	Tbc. Nurs.	4
		Med. Nurs.	5	Vac.	2	Vac.	2			Surg. Nurs.	10
						Surg. Nurs.	7			Vac.	2
										Med. Nurs.	9

NOTE.—In the shorter services certain rotation of students takes place which results in slight variation from the schedule—for instance in a three-month period including Gynecology, Diet Kitchen, and Surgical Nursing. Other variations may be made necessary by limitation of clinical field, illness of students, or other emergencies but the above schedule is followed as closely as possible.

* The class and clinical curriculum for the class entering the beginning of the spring quarter is similar to that for the class in the fall quarter with the exception of vacations which consist of one month in the junior and one in the senior year.

† October to December—classes only; January to March—part-time practice in medical and surgical nursing.

§ Clinical experience in the care of private patients will be in the departments of medical and surgical nursing.

CLINICAL CURRICULUM AFTER SIX MONTHS—
THREE-YEAR CURRICULUM

FALL CLASS*†

Freshman Year

GROUP 7		GROUP 8		GROUP 9		GROUP 10		GROUP 11		GROUP 12	
Title	Wks.	Title	Wks.	Title	Wks.	Title	Wks.	Title	Wks.	Title	Wks.
Med. Nurs.	8	Med. Nurs.	6	Surg. Nurs.	10	Surg. Nurs.	12	Med. Nurs.	6	Surg. Nurs.	10
Surg. Nurs.	4	Surg. Nurs.	10	Med. Nurs.	4	Med. Nurs.	12	Surg. Nurs.	14	Med. Nurs.	8
Pri. Pat. §	12	Vac.	2	Diet K.	5	Vac.	2	Vac.	2	Diet K.	5
Vac.	2	Psych. Nurs.	6	Vac.	2	Vac.	2	Diet K.	4	Vac.	2
		Pri. Pat. §	2	Pri. Pat. §	5					Med. Nurs.	1

Junior Year

Psych. Nurs.	6	Pri. Pat. §	10	Pri. Pat. §	7	Diet K.	5	Diet K.	1	Med. Nurs.	3
Oper. Room	8	Diet K.	5	Surg. Nurs.	2	Pri. Pat. §	12	Psych. Nurs.	6	Pri. Pat. §	12
Ped. Nurs.	12	Oper. Room	8	Med. Nurs.	3	Oper. Room	8	Pri. Pat. §	12	Psych. Nurs.	6
Obst. Nurs.	12	Ped. Nurs.	12	Psych. Nurs.	6	Psych. Nurs.	6	Oper. Room	8	Oper. Room	8
Com. Dis.	6	Obst. Nurs.	12	Oper. Room	8	Ped. Nurs.	12	Ped. Nurs.	12	Ped. Nurs.	12
Vac.	4	Vac.	4	Ped. Nurs.	12	Vac.	4	Vac.	4	Vac.	4
Surg. Nurs.	4	Surg. Nurs.	1	Obst. Nurs.	6	Obst. Nurs.	5	Obst. Nurs.	9	Obst. Nurs.	7
				Vac.	4						
				Obst. Nurs.	4						

Senior Year

Out-Patient	4	Surg. Nurs.	3	Obst. Nurs.	2	Obst. Nurs.	7	Obst. Nurs.	3	Obst. Nurs.	5
P. H. Nurs.	8	Com. Dis.	6	Com. Dis.	6	Com. Dis.	6	Med. Nurs.	4	Surg. Nurs.	4
Surg. Nurs.	6	Out-Patient	4	Tbc. Nurs.	4	Tbc. Nurs.	4	Com. Dis.	6	Com. Dis.	6
Med. Nurs.	6	Gyn. Nurs.	4	P. H. Nurs.	6	P. H. Nurs.	6	Tbc. Nurs.	4	Gyn. Nurs.	4
Diet K.	5	Tbc. Nurs.	4	Gyn. Nurs.	4	Surg. Nurs.	4	P. H. Nurs.	6	Out-Patient	4
Tbc. Nurs.	4	P. H. Nurs.	6	Out-Patient	4	Gyn. Nurs.	4	Out-Patient	4	P. H. Nurs.	6
Gyn. Nurs.	4	Med. Nurs.	4	Med. Nurs.	3	Out-Patient	4	Gyn. Nurs.	4	Tbc. Nurs.	4
Surg. Nurs.	10	Surg. Nurs.	10	Surg. Nurs.	2	Med. Nurs.	7	Surg. Nurs.	10	Med. Nurs.	7
Med. Nurs.	9	Vac.	2	Med. Nurs.	9	Surg. Nurs.	8	Vac.	2	Vac.	2
Vac.	2	Med. Nurs.	9	Vac.	2	Vac.	2	Med. Nurs.	9	Surg. Nurs.	10
				Surg. Nurs.	10						

NOTE.—In the shorter services certain rotation of students takes place which results in slight variation from the schedule— for instance in a three-month period including Gynecology, Diet Kitchen, and Surgical Nursing. Other variations may be made necessary by limitation of clinical field, illness of students, or other emergencies but the above schedule is followed as closely as possible.

* The class and clinical curriculum for the class entering the beginning of the spring quarter is similar to that for the class in the fall quarter with the exception of vacations which consist of one month in the junior and one in the senior year.

† October to December—classes only; January to March—part-time practice in medical and surgical nursing.

§ Clinical experience in the care of private patients will be in the departments of medical and surgical nursing.

THREE-YEAR CURRICULUM

The three-year curriculum leads to the degree of graduate in nursing. Candidates for the degree of graduate in nursing must complete the curriculum of class work (omitting Social Pathology and Ed. 51A and adding Gen. Col. 1 and 2) as outlined under Part II, page 24, and of clinical experience as given on pages 30-31. A description of this experience will be found on page 26. Any changes therefrom must have the approval of the Students' Work Committee of the School of Nursing. Graduates of this curriculum receive 60 blanket credits, toward a bachelor of science degree in nursing education or public health nursing.

DEGREE CURRICULUM FOR GRADUATE NURSES

CURRICULA FOR STUDENTS WHO ARE GRADUATES OF ACCREDITED SCHOOLS OF NURSING

Open to those who meet entrance requirements for specialized curricula of the College of Education (see page 26). Advanced credit for the professional nursing courses will be determined by the Committee on Evaluation of Nursing Credentials which will indicate any additional hospital services to be completed before credit is granted. Forty-five credits represent approximately the average advanced standing granted for a satisfactory course of study in a school of nursing.

Candidates must conform to the College of Education regulation relative to total credits and honor points and are entitled to privilege of quality credit rule. Candidates must also meet the physical education requirements of the College of Education.

To secure a degree in the College of Education students must earn 185 credits and 185 honor points, and in addition must earn $1\frac{1}{2}$ honor points for each credit in a major field.

Graduate work may be carried and a Master's degree earned by students who meet the requirements of the Graduate School. Programs should be made out in consultation with a major adviser in the department.

The amount and type of college courses to be required of each candidate are to be decided by her major adviser after consideration of a candidate's general education and experience. All programs must also be approved by the Students' Work Committee and the dean of the College of Education. As a rule, however, the following curricula meet the needs of the majority of students. Substitutions may be made by petition upon the recommendation of the major adviser and Students' Work Committee of the College of Education.

A. Nursing Education

Major Adviser: Katharine J. Densford

Curriculum leading to a bachelor of science degree with a major in nursing education. Courses to be included in this program will be found in Part I and Part III A of the five-year curriculum (as given on pages 23, 24, and 26) plus Education 51A and Sociology 49 and sufficient electives

as recommended by the major adviser to fulfill the total credit and honor point requirement.

B. Public Health Nursing

Major Adviser: Margaret G. Arnstein

Curriculum leading to a bachelor of science degree with a major in Public Health Nursing. In addition to the courses listed in Part III B of the five-year course (page 28) the following courses are required:

a. Included in major sequence:

No.	Title	Credits
P.M.&P.H. 2	First Aid	1
P.M.&P.H. 170	Supervision of Public Health Nursing	3
Soc. 129-130*	Principles of Social Case Work	6
Soc. 153*	Field Training in Case Work	3

A minimum of 15 credits in Public Health Field courses or accepted substitutes.

b. Other requirements:

No.	Title	Credits
Hist. 1-2	European Civilization	10
Zool. 1-2-3	General Zoology	10
Physiol. 1	Elements of Physiological Chemistry	3
Physiol. 2	Elements of Physiology	5
Bact. 41	General Bacteriology	5
Psy. 1-2	General Psychology	6
Soc. 1	Introduction to Sociology	5
Soc. 49	Social Pathology	3
Ed. 51A	Introduction to Secondary School Teaching	3
	English, or exemption according to English placement tests	0-15
	Electives as recommended by major adviser.	

AFFILIATIONS

Because of the large number of patients and the wide variety of illness manifested in these patients the school is able to offer affiliation in certain services to other schools of nursing desiring additional practice for their students.

Services in which other schools may arrange affiliations are medical, surgical, pediatric, obstetric, communicable disease, and out-patient department. To schools sending students for a period of one year it is possible to include certain additional elective services.

The terms of affiliation are agreed upon between the university school and the school sending students. A copy of the conditions of affiliation will be sent to any school interested upon request to the director, School of Nursing, University of Minnesota. The length of affiliation varies from three months in the city of Minneapolis to six months or one year for schools outside the city. Schools desiring affiliation must be accredited schools and be connected with hospitals which are approved by the American College of Surgeons as well as by the American Hospital Association.

* For the graduate nurse in public health nursing these courses are substituted for Sociology 90 and 91.

POSTGRADUATE CURRICULA

Among the opportunities offered through postgraduate courses are the following:

1. To prepare for head nurse combined teaching and administrative positions.
2. To become a proficient bedside nurse in a chosen field.
3. To become acquainted with the preventive aspects of nursing in this field.
4. To carry related university courses giving credit toward a degree.
5. To supplement deficient undergraduate preparation.

A program of academic study in the University is arranged for each field of postgraduate work, but may be modified by petition to meet the needs of the individual student and to take into consideration her interests and lines of development. All clinical subjects in the School of Nursing are also available for election.

The clinical experience of the postgraduate students is planned so as to include all available subdivisions of the various fields. The University and Minneapolis General Hospitals are available as fields for clinical experience. Students taking surgical nursing and operating room technique and administration receive their clinical experience in the University of Minnesota Hospitals; those in the medical and obstetric curricula receive their clinical experience in the Minneapolis General Hospital; those in the pediatric curriculum are assigned by the Students' Work Committee, half going to the University of Minnesota Hospitals and the other half to the Minneapolis General Hospital. Only a limited number of applicants can be accepted in any one quarter.

Postgraduate students receive full maintenance except when they are not giving nursing care in the hospital (as for instance nursery school observation) during which time the hospital does not provide maintenance. Such periods are clearly indicated in the outlines of the separate courses. During these periods the students may pay the hospital \$10 weekly for maintenance or live elsewhere if they prefer.

Students wear their own graduate nurse uniforms while in the hospital. Laundry is included in maintenance. As registrants in the School of Nursing, postgraduate students pay no tuition fee but do pay a deposit fee of \$5 on entrance, to be refunded at completion of the course if there are no charges against it. Postgraduate students who are desirous of transferring such college credits as may be counted for the bachelor of science degree pay the College of Education tuition fee (i.e., \$1.75 to \$3.50 per credit) at the time they transfer their credits from the School of Nursing to the College of Education, which college grants the degree. The following curricula do not provide for courses during the second summer term. In cases of students whose clinical curriculum allows, a course may be taken during the second term of the Summer Session by paying the required fee. Occasionally, also, additional courses may be carried in the General Extension Division by paying the required fee. Students in residence at the Minneapolis General Hospital pay carfare to and from university classes.

For students who continue work toward a degree six additional credits will be given by the Committee on Evaluation of Nursing Credits for the clinical position of the programs after the satisfactory completion of any postgraduate curriculum.

POSTGRADUATE CURRICULA

MEDICAL NURSING—TWELVE MONTHS

<i>Class Curriculum</i>		<i>Clinical Curriculum</i>		Approx. Weeks in Service
Subject	Credits	Type of Service		
Physiol. 2, Elements of Physiology	4*	Women's Medicine	7	7
or		Men's Medicine	7	7
Bact. 41, General Bacteriology	5*	Communicable Disease	4	4
P.M.&P.H. Elective	2*	Neurology	2	2
or		Receiving Department	2	2
P.M.&P.H. 60, Tuberculosis and Its Control		Diet Kitchen	3	3
		Tuberculosis	2§	2§
Soc. 1, Introduction to Sociology	5*	Laboratory and X-ray Observation	1	1
Nurs. 60, Ward Administration	4*	Physical Therapy		
Nurs. 72, Teaching and Supervision in Schools of Nursing	3 or 5*	Social Service	4	4
Electives to make total of	21*	Ward Administration	8	8
Nurs. 18a-19a, Principles of Medical Nursing	4	Medical Clinics in Out-Patient Department	8	8
Nurs. 36, Principles of Tuberculosis Nursing	1	Elective in hospital service	4	4

* Credits transferable to College of Education.

SURGICAL NURSING—TWELVE MONTHS

<i>Class Curriculum</i>		<i>Clinical Curriculum</i>		Approx. Weeks in Service
Subject	Credits	Type of Service		
Anat. 3, Elementary Anatomy	3*	Eye, Ear, Nose, and Throat Surgery	4	4
Bact. 41, General Bacteriology	5*	Tuberculosis Surgery	4	4
Nurs. 60, Ward Administration	4*	Gynecology Wards	4	4
P.M.&P.H. 50, Public and Personal Health	3*	Operating Room	3	3
or		Orthopedic Surgery, including Physical Therapy	3	3
P.M.&P.H. 53, Elements of Preventive Medicine and Public Health	5*	Out-Patient Department	2	2
Nurs. 72, Teaching and Supervision in Schools of Nursing	3 or 5*	Surgical Supply Room	1	1
Electives to make total of	21*	Administration	6	6
Nurs. 23, Massage	1	Urology	3	3
Nurs. 31, Advanced Surgical Nursing	1	General Surgery	18	18
	1	Women's surgery		
		Men's surgery		
		Tumor surgery		
		Social service or elective in hospital service	4	4

* Credits transferable to College of Education.

SCHOOL OF NURSING

OPERATING ROOM TECHNIQUE, TEACHING, AND
ADMINISTRATION—TWELVE MONTHS

<i>Class Curriculum</i>		<i>Clinical Curriculum</i>		Approx. Weeks in Service
Subject	Credits	Type of Service		
Nurs. 72, Teaching and Supervision in Schools of Nursing	3 or 5*	General Surgery and Urology.....	17	
Bact. 41, General Bacteriology	5*	Dressing and Supply Room.....	1	
Physiol. 2, Elements of Physiology....	4*	Ward and Surgical Dispensary.....	6	
Anat. 3, Elementary Anatomy	3*	Eye, Ear, Nose, and Throat Sur- gery	9	
Nurs. 56, Operating Room Admin- istration	2*	Gynecological and Orthopedic Sur- gery	9	
Electives to make total of	21*	Administration	8	
Nurs. 55, Operative Aseptic Technique	1	Elective	2	

* Credits transferable to College of
Education.

PEDIATRIC NURSING—TWELVE MONTHS

<i>Class Curriculum</i>		<i>Clinical Curriculum</i>		Approx. Weeks in Service
Subject	Credits	Type of Service		
Psy. 1-2, General Psychology	6*	Medical Children, including Nutri- tion Work and Out-Patient De- partment	8	
Nurs. 60, Ward Administration	4*	Infants, including Milk Laboratory and Newborn Infants	8	
Nurs. 72, Teaching and Supervision in Schools of Nursing	3 or 5*	Communicable Disease	4	
C. W. 40, Child Training, or.....	3*	Surgical Children, including Treat- ment Room	8	
C. W. 10, Introduction to Child Study	2*	Treatment Room	3	
P.M.&P.H. 60, Tuberculosis and Its Control	2*	Orthopedics and Physical Therapy	4	
Electives to make total of	21*	Nursery School	4†	
Nurs. 41, Principles of Pediatric Nursing	3	Administration	8	
		Elective in hospital service	5	

* Credits transferable to College of
Education.

† Maintenance not provided by hospitals.

OBSTETRIC NURSING—TWELVE MONTHS

<i>Class Curriculum</i>		<i>Clinical Curriculum</i>		Approx. Weeks in Service
Subject	Credits	Type of Service		
Psy. 1-2, General Psychology	6*	Obstetrics, including Normal and Abnormal Cases	8	
P.M.&P.H. 58, Maternal and Child Hygiene	2*	Nursery	8	
Nurs. 60, Ward Administration	4*	Delivery Room§	10	
Nurs. 72, Teaching and Supervision	3 or 5*	Gynecological Wards and Clinics	4	
C. W. 40, Child Training, or.....	3*	Communicable Disease	4	
C. W. 10, Introduction to Child Study	2*	Premature Infants	2	
Electives to make total of	21*	Prenatal Clinic, including home visiting	4§	
Nurs. 43, Principles of Obstetrics and Obstetric Nursing	2	Administration	8	
Anesthesia (7 lectures).....		Elective	4	

* Credits transferable to College of
Education.

§ Including experience in administration
of ether.

COMMUNICABLE DISEASE NURSING—TWELVE MONTHS

Class Curriculum		Clinical Curriculum		Approx. Weeks in Service
Subject	Credits	Type of Service		
Bact. 41, General Bacteriology	5*	Communicable Disease and Isolation including pediatric out-patient service and laboratory observation	26	
P.M.&P.H. 53, Elements of Preventive Medicine and Public Health or	3*			
P.M.&P.H. 50, Public and Personal Health	2*	Venereal and dermatological service including Out-Patient Department	8	
P.M.&P.H. 60, Tuberculosis and Its Control				
Nurs. 60, Ward Administration	2*	Tuberculosis	2†	
Nurs. 72, Teaching and Supervision in Schools of Nursing	2*	Administration	8	
Elective	3 or 5*	Elective in hospital service	8	
Elective	5*	† At Glen Lake Sanatorium.		
Total	22*			

* Credits transferable to College of Education.

SUMMER COURSES

Summer courses for graduate nurses are offered during the first term (six weeks) of the Summer Session in the School of Nursing in co-operation with the Department of Preventive Medicine and Public Health. Whenever possible, guest instructors outstanding in their respective fields are added to the regular faculty for these courses. Courses offered cover such subjects as ward administration, teaching, supervision, administration in schools of nursing, and public health nursing in its various phases.

A special summer announcement describing these courses can be had upon request to the director.

DESCRIPTION OF COURSES

- Anat. 3f,s. Elementary Anatomy. Brief resumé of cytology and embryology. More detailed study of the gross anatomy and histology of the organ system by means of lectures, laboratory studies, and demonstrations. (3 cred.; 44 hrs.)
- Bact. 1f,s.‡ Elementary Bacteriology. Principles of bacteriology, general survey of pathogenic bacteria, molds, protozoa, and viruses. Elements of immunity. Sanitary analysis of water and milk. Germicides. Bacterial food poisoning. (4 cred.; 66 hrs.)
- Ed.T. 51Aw.‡‡ Special Methods of Teaching in Schools of Nursing. Principles underlying clinical and classroom teaching in schools of nursing. Planning and evaluating instruction. (3 cred.)
- Ed.T. 51Bs.‡‡ Special Methods of Teaching and Directed Teaching in Schools of Nursing. Observation and study of principles of teaching applied in the nursing school situation. Supervised practice in teaching of nursing subjects. (5 cred.)
- Gen.Col. 2f,s. Practical Applications of Psychology. The aim of this course is to present a picture of the ways in which the human being meets the problems of his environment and develops the many traits which are called personality. (6 cred.; 66 hrs.)
- Med. 15f. Diet Therapy. This course deals with the diseases which demand dietary treatment and with the scientific principles underlying diet therapy. (1 cred.; 11 hrs.)
- Nurs. 1f,s. History of Nursing. A brief historical survey of nursing serving as a basis for study of problems of the present day. (1 cred.; 11 hrs.)
- Nurs. 10f,s. Introduction to Nutrition. A course dealing with food and its relation to the human body; the processes by which the body utilizes food; the study and classification of the various foods together with the caloric index. The normal diet and routine hospital diets are given with directions for modification under special circumstances. (1 cred.; 11 hrs.)
- Nurs. 11w,su. Foods and Nutrition. Laboratory and lecture course in practical dietetics, food preparation together with methods of cookery; definite instruction in carrying out the dietary prescription is given. (3 cred.; 55 hrs.)
- Nurs. 14w,s. Introduction to Medical Sciences. This course attempts to integrate the information which the student has learned in the physical and social sciences and focus it upon the patient in his relation to nurse, doctor, and community. It includes consideration of the development of medical science, the causes of disease, how disease manifests itself in the body, how the doctor makes the diagnosis, how disease is treated, and methods of disease control and prevention. (2 cred.; 22 hrs.)

‡ Microscope required. Student (except medical) may obtain use of microscope by purchasing \$1.50 microscope card from bursar.

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

- Nurs. 15w,su-16f,s. Nursing Arts. A course presenting the principles of fine nursing, demonstrating their application in the care of the patient, showing the relation between the operation of these principles and foundation sciences, developing through supervised practice a high degree of skill in caring for patients and judgment in observing symptoms and conditions. Nursing 15 includes Ethics and covers a total of 88 hours. Nursing 16 includes bandaging, massage, and metrology and covers a total of 44 hours. (10 cred.; 140 hrs.)
- Nurs. 18w,su-19f,s. Principles of Medical and Surgical Nursing. A course designed to give a knowledge of the causes, symptoms, treatment, and prevention of abnormal medical and surgical conditions including the nursing aspects and nursing care of patients with these conditions. Nursing 18 includes general consideration of causes and treatment of disease, conditions of the respiratory tract, including nose and throat, and conditions of the gastrointestinal tract, including oral hygiene, and conditions of the liver and gall bladder. Nursing 19 is devoted to study of conditions of the skin, of the endocrine glands, of allergy, of the circulatory system, and of the urinary system. (8 cred.; 88 hrs.)
- Nurs. 23w,su. Massage. Demonstrations and class practice in the general manipulation of the body tissues and in those general movements which have the value of passive exercise for the sick or convalescent. For post-graduates. (1 cred.; 11 hrs.)
- Nurs. 25. Principles of Orthopedics and of Orthopedic Nursing. Lectures, classes, and clinics dealing with orthopedic conditions including fractures and amputations. Emphasis is laid upon the preventive, economic, and social aspects of these conditions. Treatment (including physical therapy) and nursing care are stressed. (1 cred.; 11 hrs.)
- Nurs. 31w. Advanced Surgical Nursing. Lectures, classes, and demonstrations dealing with the more important surgical conditions, recent research, new literature, and treatments used in modern practice of general surgery. For postgraduates. (2 cred.; 22 hrs.)
- Nurs. 35f,w,s,su. Principles of Communicable Disease Nursing. Lectures, classes, and demonstrations on the etiology, symptoms, treatment, and nursing care of communicable diseases with emphasis on their significance to public health and on preventive measures. (2 cred.; 22 hrs.)
- Nurs. 36f,w,s,su. Principles of Tuberculosis and Tuberculosis Nursing. A course designed to give the distribution of tuberculosis, theories of invasion, pathology and bacteriology of tuberculosis, principles of treatment and care of tuberculous patients with emphasis on the preventive work in this field. Lectures, clinics, classes, and demonstration. (2 cred.; 22 hrs.)
- Nurs. 37w. Principles of Neurology and Neurological Nursing. Lectures on the diagnosis, treatment, nursing care, and prevention of neurological disorders. (2 cred.; 22 hrs.)
- Nurs. 38f,w,s,su. Principles of Psychiatry and Psychiatric Nursing. A course designed to give a knowledge of organic and functional psychoses, diagnosis, and treatment; emphasizing the relation of personality disorders to physical disorders, to family and community problems, etc., and

- the teaching of prevention. Lectures, clinics, ward nursing classes, case study conferences, demonstrations, and excursions. (4 cred.; 55 hrs.)
- Nurs. 39f. Principles of Nursing in Conditions of the Reproductive System. This course consists of lectures on etiology, the symptoms, treatment, and prevention of abnormal conditions. Psychological aspects of this branch of nursing are considered. Demonstrations, classes, and clinics form a part of the course. (1 cred.; 11 hrs.)
- Nurs. 41f,s. Principles of Pediatrics and Pediatric Nursing. Lectures, classes, clinics, and demonstrations on the development, mental and physical, of the normal child, on the diseases of infancy and childhood, on treatment, care, feeding, and guidance of the child. Movements for the promotion of child health. (3 cred.; 33 hrs.)
- Nurs. 43f,s. Principles of Obstetrics and Obstetric Nursing. This course gives instruction in the physiology, pathology, and hygiene of pregnancy, labor, puerperium, and care of newborn infants. Emphasis is placed on the relation of this field to the public health. Lectures, classes, clinics, and demonstrations. (2 cred.; 22 hrs.)
- Nurs. 48w. Principles of Care of Eye and Ear Conditions. This course consists of lectures, classes, clinics, and demonstrations. It deals with medical and nursing care, pathological conditions of the eye, ear, and nose. (2 cred.; 22 hrs.)
- Nurs. 50f. Survey of Professional Fields. A course dealing with present-day problems of nursing—legal, economic, civic, legislative. A survey of fields open for nurses and of related health movements. (2 cred.; 22 hrs.)
- Nurs. 55f,w,s,su. Operative Aseptic Technique. A course dealing with the personnel of the operating room; the care and use of equipment; antiseptics and methods of sterilization; problems of co-ordination with other hospital departments; and management of operating room schedule. Taught by lectures, demonstration, discussion, and field types. For postgraduates. (1 cred.; 11 hrs.)
- Nurs. 56f,w,s,su. Operating Room Administration. A course dealing with the administration and management of an operating room. Taught by lectures, discussion and field trips. For postgraduates. (2 cred.; 22 hrs.)
- Nurs. 60s. Ward Administration. A course designed to acquaint the nurse with the principles underlying ward management giving specific attention to responsibilities related to physical environment, personnel management, work schedules, and patient care programs. Opportunity for application of these principles in real ward situation carrying two additional credits will be required of all postgraduate students except those in the operating room and will be elective for any other students in the course by special permission of the instructor. (4 cred.; 44 hrs.)
- Nurs. 63w. Motion Study. A course designed to apply the science of motion study to the technique of nursing. The student is taught to analyze critically the present methods used in nursing, and to devise better ways of doing the job. Motion picture method of analysis, lectures, and laboratory work. (2 cred.; 33 hrs.)

- Nurs. 65w. Comparative Nursing Procedures. A comparative study of nursing procedures including individual projects. (4 cred.; 44 hrs.)
- Nurs. 69f,s. Survey of Conditions and Trends in Nursing. A study of conditions existing in nursing as revealed in literature and various reports. An attempt to define tendencies in nursing with a view to designating those which appear most favorable to social progress. Materials in this course are covered in qualifying examination. (3 cred.; 33 hrs.)
- Nurs. 71s. Curriculum Making in Schools of Nursing. General principles of curriculum making; study of the functions of the graduate nurse in the community as determinants of the clinical and classroom curricula of the professional school. Integration of materials into curricula preparing nurses as community health agents. (3 cred.; 33 hrs.)
- Nurs. 72f. Teaching and Supervision in Schools of Nursing. Principles of teaching applicable in schools of nursing. Planning of class work. Use of case studies, ward clinics and demonstrations, and assignment of practice, as methods of clinical teaching. Methods of evaluating students' work. Principles of supervision and their application for the improvement of nursing practice. For postgraduates. (3 cred.; 33 hrs.)
- Pharm. 8w,su. Elementary Pharmacology. A study of the history, uses, classification, and preparation of drugs; definition of descriptive terms; methods of administration; principles of dosage, etc., together with appropriate laboratory exercises. (3 cred.; 44 hrs.)
- Physiol. 1f,s. Elements of Physiological Chemistry. (a) A brief study of physical and chemical laws; of the composition of matter, chemical compounds, chemical and energy changes; of the ionic theory; of gases and solutions. (b) The physiological chemistry of gases, water, salts, carbohydrates, fats, and proteins; of the nutritive media, of digestive fluids and digestion, of metabolism, of excretion and excretory products. (3 cred.; 44 hrs.)
- Physiol. 2f,s. Elements of Physiology. Functional properties of tissue cells; the material bases of the body; the nutritive media; the physiology of nerve and muscle, of the nervous system; the vascular mechanism; respiration, digestion, excretion, and metabolism. (5 cred.; 66 hrs.)
- P.M.&P.H. 3f,w,s. Personal Health. Elementary principles of normal body function; predisposing and actual causes of disease; ways in which disease may be avoided. (2 cred.; 22 hrs.)

CLINICAL EXPERIENCE†

COMMUNICABLE DISEASE NURSING

Experience in nursing care of communicable diseases, venereal diseases, and tuberculosis. Preventive and public health aspects are emphasized. Observation of venereal treatment in out-patient department is arranged wherever possible. 1½ months.

† A slight variation of clinical experience is allowed for illness, absence, and vacation adjustments.

GYNECOLOGICAL NURSING

Nursing care of gynecological patients. Examination, pre- and post-operative care, including surgical dressing room technique. 1 month.

MEDICAL NURSING

Clinical experience in the application of principles of medical nursing to the care of medical patients. The care of patients with neurological disorders is included in this period. 4 to 6 months.

OBSTETRIC NURSING

Clinical experience in the care of obstetrical patients, both mothers and newborn infants, including the instruction of mothers. Practice in assisting at both normal and abnormal deliveries. 3 months.

OPERATING ROOM

The students learn and apply in practice the principles of sterile technique and the care of operating room equipment and supplies. They give assistance at a number of operations of varied types including general surgical, orthopedic, ear, eye, nose, and throat, gynecological and urological, as well as assistance with cytosopic treatments. 1½ to 3 months.

OUT-PATIENT DEPARTMENT

Experience in the management of clinics, assisting with examination and treatment of patients. A study of the dispensary as a community health center. 1 month.

PEDIATRIC NURSING

Observation of the normal child, preparation of formulae, clinical experience in the care of convalescent and sick infants and children. 3 months.

PRIVATE PATIENT NURSING

A period of clinical experience in the nursing care of private patients, usually in the medical and surgical services. 1½ to 2 months.

PSYCHIATRIC NURSING

A clinical experience with a wide variety of psychiatric disorders. Supervised practice in care of the underactive, the overactive, the newly admitted, and the convalescent patient, in planning and supervising occupational and recreational therapy, and in giving simple hydrotherapy. 1½ months.

PUBLIC HEALTH NURSING

Supervised field experience with community public health nursing agencies. 1½ months.

SPECIAL DIET KITCHEN

Supervised practice in preparing, planning, and calculating therapeutic diets. Two classes a week are held, covering diet therapy for the patient under treatment at the time. 1 month. Students also have $\frac{1}{2}$ month of pediatric diet preparation while in the Pediatric Department.

SURGICAL NURSING

Application of principles of surgical nursing to the care of surgical patients including those affected by urological, orthopedic, and ear, eye, nose, and throat conditions. 4 to 6 months.

TUBERCULOSIS NURSING

Clinical experience in nursing care of all types of tuberculosis. Preventive and educational aspects are emphasized. 1 month.

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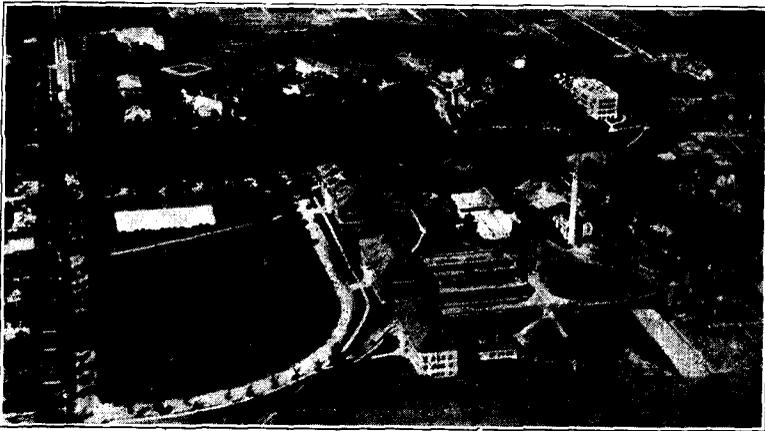
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The Bulletin of the University of Minnesota

*The School of Agriculture
Courses in Agriculture and Home
Economics*

Part I

*Announcement of Courses for the Years
1938-1940*



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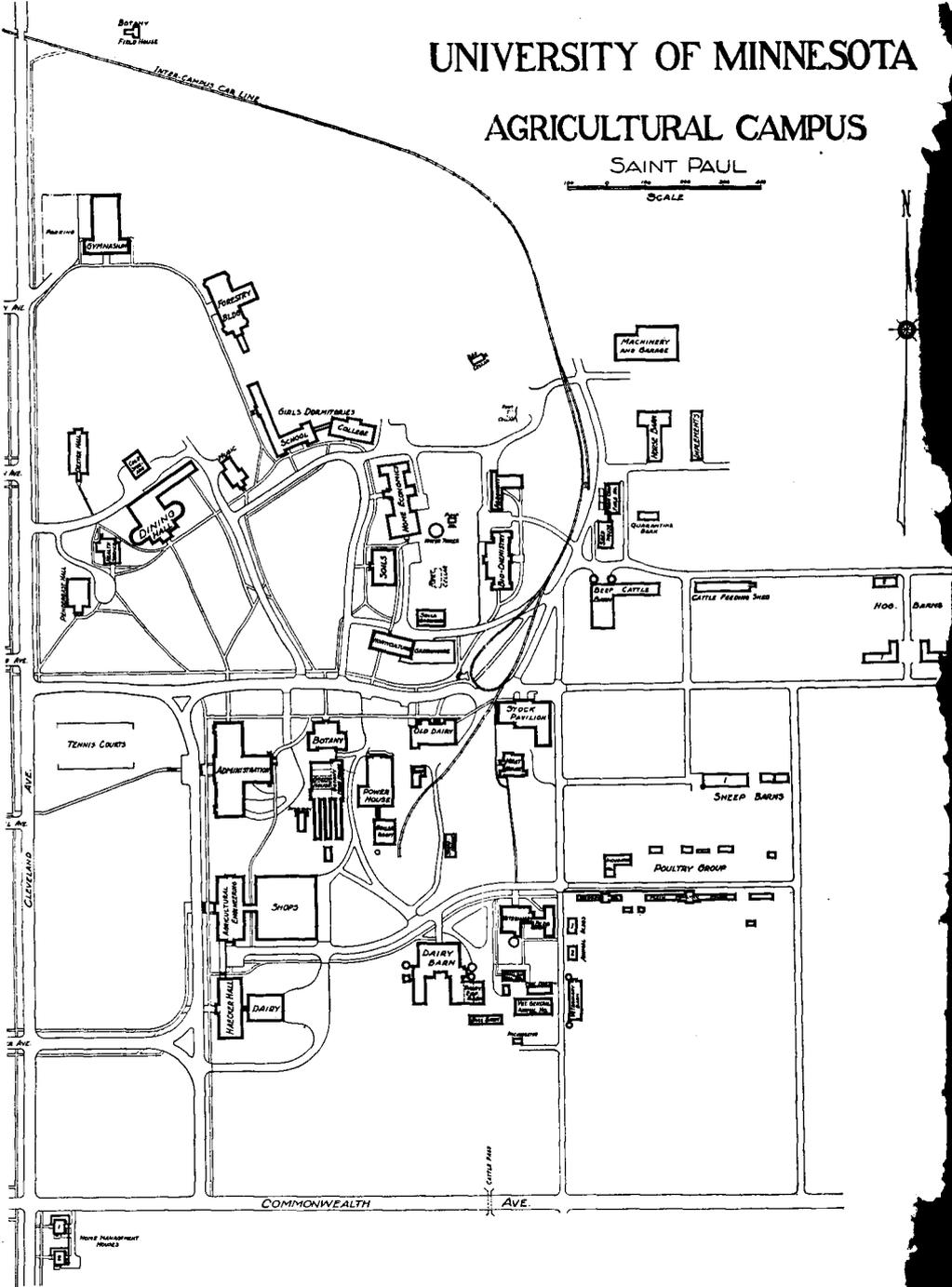
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UNIVERSITY OF MINNESOTA

AGRICULTURAL CAMPUS

SAINT PAUL



THE SCHOOL OF AGRICULTURE

FACULTY

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RHETORIC

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GENERAL INFORMATION

LOCATION

The School of Agriculture is located at University Farm, St. Paul, Minnesota, about midway between the business portions of the cities of St. Paul and Minneapolis. The school is a part of the Department of Agriculture of the University of Minnesota, and is governed by the Board of Regents.

HOW TO GET TO THE SCHOOL

Check all baggage to Minneapolis or St. Paul and bring checks to the school.

A charge of fifty cents is made by the school for transporting trunks at the opening of the school year. A charge of not more than fifty cents is made for the return of baggage at the close of school, provided it is ready to go on the days assigned.



Clothing Construction Class

Take the Como-Harriet or Como-Hopkins car from either St. Paul or Minneapolis, and get off at Doswell Avenue. University Farm is about a ten-minute walk from the car line. The dormitories are on the campus.

TIME OF OPENING AND CLOSING

The School of Agriculture opens early in October and closes late in March. For exact dates of opening and closing of each term see the calendar in Part II of the bulletin.

Instruction begins promptly at the opening of each term. Students should be present the first day and remain until the close of the term. No student will be allowed to register after the second week of the term except by permission of the Students' Work Committee.

PURPOSE

The School of Agriculture was organized in 1888. It is essentially neither a high school nor a college but rather a vocational agricultural school, the objective of which is to give a practical education to young men and women. It offers a course of study designed to fit young men and young women for successful farm life, and aims to give its students the necessary preparation for useful citizenship.

ADMISSION

Students should correspond with the superintendent, School of Agriculture, University Farm, St. Paul, Minnesota, prior to coming to the institution, to make the necessary preliminary arrangements for registration.

Farm experience.—All male students are required to have had six months' farm practice before entrance.

Minimum age.—No student under seventeen years of age will be admitted. Exceptions to this rule may be considered in the case of applicants who have completed one full year of senior high school work. Similar exception may be considered when no high school is immediately available to the applicant.

Scholastic preparation.—Students who have completed eighth grade work, or its equivalent, in the common schools, are admitted without examination. Each applicant for admission should send to the superintendent for a certificate of admission which, when properly filled out by former teacher or superintendent and returned to the registrar, will be accepted for entrance. Diplomas should not be sent.

Students from city or grade schools must present a dismissal card from the last school attended; they will not be admitted before finishing eighth grade work, *nor until their former school records have been passed upon. These records must be presented at least three weeks prior to the opening of the school and must be accompanied by letters of recommendation.*

Unclassed students.—Applicants of mature years who cannot meet the above entrance requirements will be admitted for special programs. Such students can graduate when the entrance requirements as well as the requirements of the prescribed course are fully met.

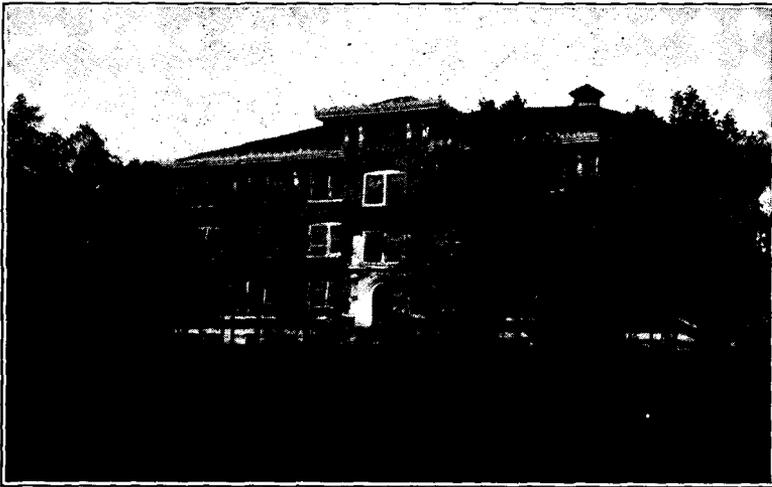
Credit for high school work.—Students will be accepted from approved high schools and be given credit toward graduation from the School of Agriculture as follows:

Minimum number of credit hours	
High school graduate	36
Nongraduate—per unit	2½
Agriculture—per unit (boys)	12½
Maximum number of credit hours	72

High school courses equivalent to courses offered in the School of Agriculture will receive the same credit as those offered in the school. The first year's work in sewing, cooking, and freehand drawing will be allowed the same credit as that offered in the school. Additional credit in these subjects will be allowed only on the approval of the Home Economics Division and the Enrolment Committee.

COURSES OF STUDY

Courses in both agriculture and home economics are offered. These cover a wide range of subjects and are largely vocational in character. Provision is also made for instruction in English, mathematics, economics, sociology, and other academic subjects. The courses require three winters of six months each for completion. The character of instruction and environment tend to educate students toward the farm, and to develop in them a love for farm life by showing them its possibilities. In this respect the school has been very successful, as over 80 per cent of its graduates continue agricultural pursuits.



One of the Boys' Dormitories

HOME PROJECTS

Putting science into practice is the aim of the School of Agriculture. The school is organized on a plan which provides for teaching agriculture through six months of study at the school and six months of supervised home project work on the farm. Home project work is advised for every student in the school but is as yet required of the boys only for graduation. The purpose of the home project work is to give the pupils an opportunity to apply some phase of their classroom instruction to the operation of a farm or a farm home.

The students may have a free choice as to the nature of their projects but are advised to choose those connected with the class work being taken.

Registration should be completed before the student leaves the school in the spring. At the time of registration a project book with forms suitable for recording the necessary data will be provided.

During the summer season the work of the students will be inspected by instructors from the school so far as possible. The project book must be submitted to the classroom instructors and be graded by them but must have final approval of the Home Project Committee.

Home project work cannot be accepted for credit from students who are not properly registered before starting upon the project.

Three credits of home project work are all that any student should attempt to earn in one season. These may be counted toward graduation from the school or, in the event that a student expects to enter the College of Agriculture, Forestry, and Home Economics, they may be used as one unit toward entrance to the college.

A special bulletin on home projects may be obtained from the superintendent's office.

RULES AND REGULATIONS

A pamphlet containing the rules and regulations of the school will be furnished each student at the time of registration or upon application to the registrar's office.

HOME LIFE ON THE CAMPUS

The life of the student while attending the School of Agriculture is subject to supervision. The home life of each student is carefully guarded, and everything is done to promote a healthful and moral atmosphere. The use of tobacco on the campus, and the use of intoxicating liquors of any kind is strictly forbidden. Anyone not in accord with these restrictions and not willing to lend a hand toward promoting a strong moral growth should not come to the School of Agriculture. It is the aim of the administration to be firm, reasonable, and sympathetic. A student who becomes antagonistic to the spirit of the school will be dismissed whenever the general welfare requires it. The school does not wish to undertake the problem of disciplining students who are not in sympathy with its purpose.

STUDENTS IN DORMITORIES

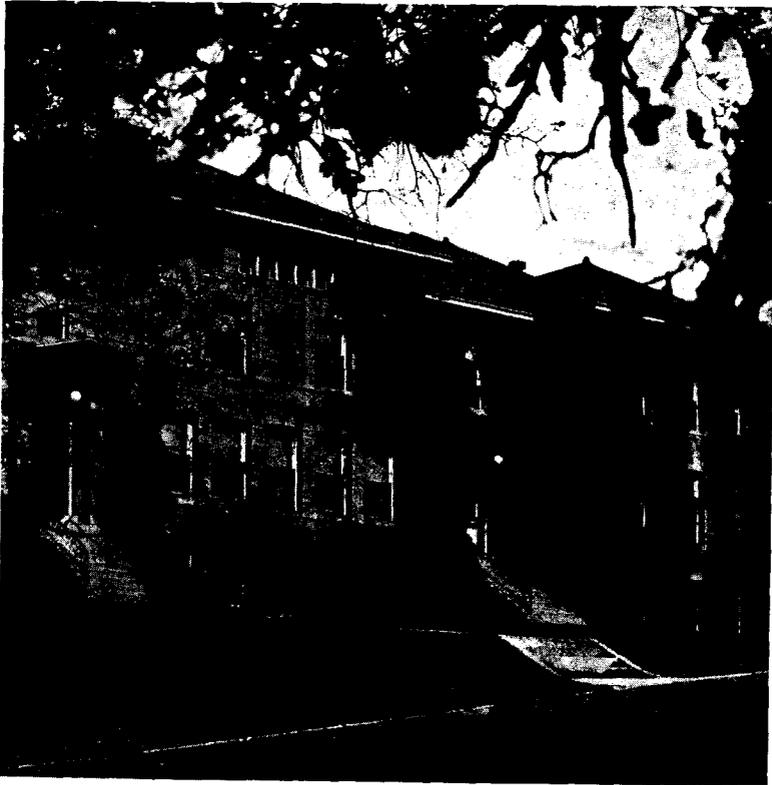
The students' social and dormitory life is supervised and directed by two women instructors of the school faculty, one in charge of the girls' dormitories, the other in charge of the boys' dormitories. All regulations governing the campus life of the student are subject to the approval of the dean of the Department of Agriculture and the superintendent of the school. A feature in the social life of the boys in the dormitories has been contributed in the form of clubrooms in Pendergast Hall and Dexter Hall.

From 8:15 a.m. to 4:30 p.m. and also after 7:30 p.m. students not at recitation or assembly are expected to be in their rooms or in the library

studying or reading. The rooms shall at all times be quiet, especially in the evening, so that no student will be disturbed.

ASSEMBLY

On each school day, at 12:10 p.m., except Monday and Thursday, the students meet in the assembly hall. After the opening exercises, brief talks are given by the superintendent, members of the faculty, or invited guests.



The Girls' Dormitory

During the year the list of speakers will include prominent state and national officials, business men, particularly those connected with the agricultural industries, professional men and women, prominent clergymen of all denominations, educators from other institutions, and successful farmers and homemakers. It has been found that this plan gives to the students an opportunity to hear men and women of prominence discuss a wide range of topics, many of which relate to rural and agricultural problems.

HOLIDAYS

On Thanksgiving Day no classes will be held, but school will continue as usual on the Friday and Saturday following.

REQUIREMENTS FOR GRADUATION

The diploma of the School of Agriculture is granted on the completion of:

1. The prescribed course of study, including all of the required work and enough elective work to make 111 credit hours for agriculture students, 3 of which must be earned in summer project work taken each summer after the student has been in residence. Not more than 9 credits of project work may be counted toward graduation. Home economics students are required to complete 108 credits for graduation. At least 36 of the credits required for graduation must be earned by class attendance in this school.

2. Physical education, 1 credit hour for each term of residence.

3. Social problems for boys, 1 credit hour, or social training for girls, 2 credit hours.

4. An honorable standing in deportment.

5. For boys, at least six months of practical farm experience in addition to the six months required for entrance. This experience may be gained either on the home farm or in the employment of a good farmer. Regularly approved and recorded home project work may be counted toward this requirement. The satisfaction of this requirement shall be certified by the Home Project Committee.

EXPENSES

Each student is required to pay for breakage of apparatus used in practical work.

The cost to the student for board is the actual cost of maintaining the table (including management). Board is paid in advance each term. No deduction in charge is made for any absence of less than five consecutive days. If students are compelled to be absent five or more days, they are allowed half rates, if they make arrangements before leaving. Breakage in dormitories not reported shall be assessed on the resident dormitory group.

The buildings are all lighted by electric lights and warmed by steam. The sleeping rooms are each furnished with a bedstead, mattress, dressing bureau, chairs, and table.

Each student provides *four sheets, two blankets, or one blanket and one quilt, one bedspread, one pillow, three pillow cases, towels, combs and brushes, one glass tumbler, and one teaspoon.*

For the boys' gymnasium work a track suit and gymnasium shoes are required.

Each girl is required to provide *two smocks suitable for the protection of her clothing in the home economics classes. These should be planned for and purchased after attending her first classes.*

For the girls' gymnasium work a uniform suit is required. This should be obtained at the school. All are required to have tennis shoes.

Each girl should be provided with a kimono or bathrobe, a pair of bedroom slippers, at least four changes of undergarments, nightgowns, and hosiery. It is suggested that each girl be provided with two simple school dresses and a dress suitable for social occasions. Rubbers and umbrella are necessities.

TABLE OF CHARGES

Tuition fee, per term	
Residents of the state	\$ 3.00
Nonresidents	6.00
Deposit as guarantee for the return of books and other material	5.00
Incidental fee	8.00
Textbook rental fee (for those not desiring to purchase their books) per term	1.50
Music fee, per course (private lessons).....	6.55
Special Problems in Speech fee, per term (private lessons).....	6.50
Room in dormitory (price subject to change) per term	16.00
Board. First term (price subject to change)	40.65
Second term (price subject to change).....	37.65
Laundry, per term (price subject to change). Required of all in dormitories.....	4.00
Gymnasium suits—	
Boys (price subject to change)	2.00-3.00
Girls (price subject to change).....	1.50
Average cost drawing instruments, notebooks, stationery, and supplies, per year	3.00-5.00

The payments to be made to the school at time of registration are:

Student in dormitory	Fall Term	Winter Term
Resident	\$78.15	\$70.15
Nonresident	81.15	73.15
Day student		
Resident	17.50	12.50
Nonresident	20.50	15.50
Not in attendance first term add \$5 to the winter term charges above as a deposit fee.		

STATE AID

For any farm boy or girl under 21 years of age who has completed the eighth grade but is not yet a high school graduate and who comes from a school district which does not maintain an accredited high school within its own jurisdiction, the state of Minnesota will pay the necessary tuition, laboratory, and equipment fees (except deposits) at the school. Deposits are to be paid by the individual student.

A rate of \$6 per month has been established to cover all the tuition, laboratory, and equipment fees (except deposits) of such students and the same privilege is extended to any other students in attendance at such schools electing to pay fees on this basis.

Student must secure a *tuition certificate* from the county superintendent of schools in the home county and present it when registering at the School of Agriculture.

For further information write directly to Superintendent J. O. Christianson, School of Agriculture, University Farm, St. Paul.

DORMITORIES

Each student in attendance at the school who expects to return the following year and who desires to room in the dormitory will, before going home, make a deposit of \$2 with the cashier as evidence of good faith that he expects to return on the opening day of the following school year. Dormitory rooms will be assigned to new students in the order in which their applications are received. Each prospective student who desires to room in the dormitory will be required to send a deposit of \$2, which will be returned in case the application is received after all dormitory rooms are assigned.

All money orders or checks should be made payable to University of Minnesota, Department of Agriculture.



The School of Agriculture Band

STUDENTS' HEALTH SERVICE

A health fee of \$3 a term, included in the incidental fee, is paid by each student for the maintenance of the Students' Health Service. For this fee the student may receive physical examination and the professional services of the staff when needed.

For services which are specialized and individual in character, such as operations, board and laundry when in the hospital, drugs, X rays, out-patient calls, dentistry, etc., special fees, calculated on a cost basis, are charged. No student, however, will be denied service because of inability to pay these fees.

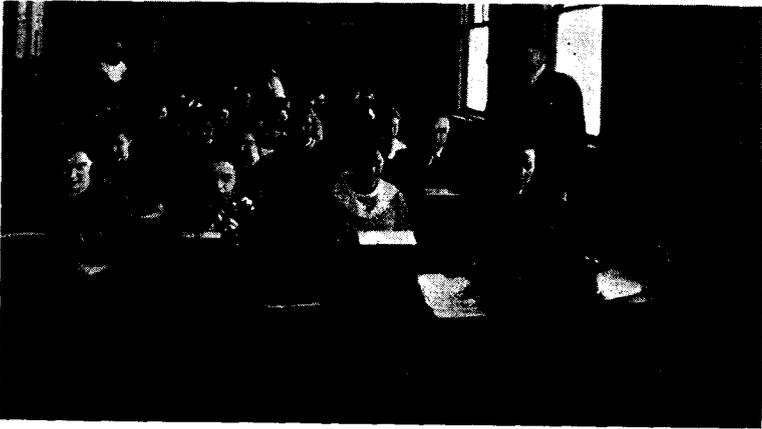
The offices of the Health Service and the Students' Hospital and Dispensary on the University Farm campus are located in the Health Service Building. The services of the hospital and dispensary are available at all hours of the day and night. The telephone call is Nestor 4616. Physicians of the Health Service will be in attendance daily. Their office hours will be announced.

CLASS TRUST FUNDS

The classes of 1902, 1916, 1924, 1925, 1929, 1930, 1931, and 1932 each left with the school funds "to assist by temporary loans, at a reasonable rate of interest, deserving students needing such help." Applications for loans should be made to the superintendent.

THE LUDDEN TRUST

The late Honorable John D. Ludden, of St. Paul, gave the University of Minnesota \$10,000, to be held, invested, and reinvested by the University through its Board of Regents, and the income thereof to be collected, received, and applied by said Board of Regents to the financial assistance of students of either sex in the School of Agriculture.



A Class in Business

Mr. Ludden imposed the following conditions: "The beneficiaries must be youths who are residents of the State of Minnesota; they must be and continue to be of unblemished moral character, and of temperate and industrious habits; and they must be such as by examination and trial shall evince and maintain a taste, habit, and aptitude for study and improvement; and any student who shall fail to come, or shall cease to be, within the above conditions shall forfeit all claims to the benefits of such fund. Subject to these conditions the administration of such income is entrusted to the said Board of Regents, which may make such rules therefor as they may deem judicious."

This fund produces \$400 a year. Those wishing to avail themselves of its benefits shall apply to the superintendent of the school.

THE DORR FUND

This fund was willed by the late Caleb Dorr, of Minneapolis, for the benefit of the Department of Agriculture of the University.

The income from \$20,000 of the fund is to be devoted to establishing and maintaining graduate research fellowships in agriculture; the income from the remainder to be used for scholarships, donations, and loans to worthy and needy students.



A Class in Farm Motors

CALEB DORR CASH SCHOLARSHIP PRIZES

Cash prizes amounting to \$90 each year are offered to the students securing the highest standings in general scholarship. Of this amount \$35 will be offered each term in five prizes of \$10, \$8, \$7, \$5, and \$5. All students carrying the full work of 18 credit hours per term are eligible for these prizes. One prize of \$15 will be awarded at the close of the second term for the senior student graduating from the School of Agriculture with the highest scholarship and student activity record for the first five terms.

The awards will be made on (1) class standings as recorded by instructors for the term's work, and (2) on student activities and deportment. The class standings will count for 90 per cent and the student activities for 10 per cent. In determining the grades of scholarship the merit point system adopted by the registrar's office will be used. The rating for student activities will be based on the quality of leadership as indicated by a review of the activities participated in and the general deportment of the student during attendance at school. This rating will be determined by the scholarship committee in consultation with the preceptresses and the superintendent of the School of Agriculture.

Records made in gymnasium will not be counted in making the scholarship awards.

Besides the above, prizes are given for excellence in extemporaneous speaking, community betterment, essay writing, and declamation. The rules governing these scholarships may be found in the booklet of information supplied to each student at the time of his registration.

GIDEON MEMORIAL PRIZE IN HORTICULTURE

A fund of \$500 was established in memory of the late Peter Gideon, the originator of the Wealthy apple. The annual income is to be divided into two prizes for the best home projects in horticulture.



Cross Country Team

CADY MEMORIAL FUND

The Minnesota Garden Flower Society raised by popular subscription the LeRoy Cady scholarship fund of \$1,500, the interest from which is to be used to aid deserving students who are pursuing courses in horticulture.

ATHLETICS

Interscholastic.—Competition in basketball, wrestling, and cross-country running provides an opportunity for the men students to try their skills in competition with other schools and organizations. Games and contests with other schools of agriculture are highlights of the interschool program. During the winter term the girls participate in basketball games with other school teams. Contests are regarded as an important phase of the activities of the department of physical education, an objective of the interscholastic athletic

program being to realize through proper organization and administration as many of the educational opportunities of athletics as possible.

Instruction, team, and individual practice periods under competent coaches will be held each afternoon between 4:00 and 5:30 p.m. at the gymnasium. Cross-country practice begins with the opening of school in the fall, and matches are held in the early part of the fall term. Basketball and wrestling team practices start in November with scheduled contests beginning in December and extending through the winter quarter.

The "A," one of the most highly prized awards, is given to those men and women who have achieved distinction in interscholastic athletics and have fulfilled the participation requirements during the season.

Intramural.—The intramural program provides for every student in the school the opportunity to enjoy and participate in athletics and recreational activities. Emphasis is placed on those sports which develop leisure time interests and habits. Intramural athletics provide a natural sequel to the required program of physical education.

A program of activities consisting of diamondball, touchball, football, field meet, horseshoe, table tennis, archery, swimming, basketball, volleyball, track and field meet, and boxing and wrestling tournaments is offered during the school year. An intramural committee, composed of a representative from each class, serves the director in an advisory capacity.

The Department of Physical Education and Athletics urges students to participate in the varied program and to use the facilities and equipment of the gymnasium. A large basketball court, running track, swimming pool, badminton and volleyball courts, archery range, handball and squash courts, separate boxing and wrestling rooms, golf driving net, and social games room provide adequate indoor facilities, and the excellent recreation field adjoining the gymnasium offers opportunities to each student to take part in activities which are physically wholesome, mentally stimulating and satisfying, and socially sound.

ORGANIZATIONS

Students' debating societies.—Students are urged to unite with one of the many literary societies of the school for both pleasure and profit. The work is under the supervision of one of the instructors in the rhetoric section. It affords training in parliamentary practice, public speaking, debating, and dramatic work.

Students' Christian associations.—The Young Men's and Young Women's Christian associations are voluntary organizations which have for their objects the maintenance of a positive moral and religious atmosphere and the development of a complete Christian manhood and womanhood, physical, intellectual, social, and spiritual. These associations carry on various lines of activity. Employment and housing bureaus are maintained for the use of students. A general reception is given at the beginning of each term. Each Sunday morning at 8:30 a song service is held. Each Thursday evening at 6:30 o'clock the men gather for a fellowship meeting, and the women, for a meeting of the student Y.W.C.A. The work is under the direction of general secretaries and the supervision of a board of directors made up of professors

and students. The associations are nonsectarian in order that all students may find in them an opportunity for Christian activity and mutual helpfulness.

PUBLICATIONS

Agrarian.—The *Agrarian* is a yearbook published for the senior class of the school. The book gives an outline of all school and class activities, is fully illustrated, and contains, in addition to brief articles and items of purely local interest, a number of contributions from students and faculty members, dealing with the various phases of agricultural education and with agricultural problems.

News of the School of Agriculture.—The *News of the School of Agriculture* is published monthly during the school year. It is managed by a student board elected by the various classes. It aims to give publicity of interest to students and alumni and to serve as a tie between the school and the alumni.

LIBRARY

The agricultural library is well equipped for supplying the needs of both undergraduate and graduate students. It contains over 45,000 volumes of general and technical literature, and thousands of unbound pamphlets, bulletins, and reports. There are complete sets of all the standard encyclopedias and dictionaries, and files of over 600 popular and technical magazines and periodicals.

ZOOLOGICAL MUSEUM

The zoological museum is on the third floor of the Administration Building, connecting with the entomology lecture room. It contains a collection of birds, a large series of mammals, shells, anatomical models, etc., all used in class instruction. Friends of the institution who are inclined to donate zoological specimens may rest assured that they will be promptly installed and given the best of care.



Dean W. C. Coffey Addresses the Students on Life Problems at Sunday Morning Song Service

COURSES OF STUDY

For courses of study in agriculture, see pages 18 to 21.

For courses of study in home economics, see pages 22 to 24.

Figures following the names of courses indicate the number of credit hours. One credit hour is equivalent to one class period devoted to recitation or lecture or to two such periods devoted to laboratory work.

For description of the courses listed in the following outline see pages 25 to 38, and for schedule of classes, School of Agriculture Bulletin, Part II.

See pages 7 and 8 for statement with reference to home project work.

Courses which may be taken either term are indicated by (f,w), those which are offered in the fall term only are indicated by (f), and those offered only in the winter term by (w).

Every student in agriculture who plans to graduate is expected to select one of the following courses of study: (a) general farming, (b) farm mechanics, (c) horticultural and nursery training, (d) livestock production, or (e) crop production.

Adults desiring a special course should consult the Enrolment Committee.

Special students of mature years who do not desire a diploma but who wish to take special work may, by action of the Enrolment Committee, be allowed to arrange a curriculum under the supervision of a faculty adviser.

GENERAL FARMING

FRESHMAN YEAR

REQUIRED—FIRST TERM	REQUIRED—SECOND TERM
English I, 3(f,w)	English Classics, 3(f,w)
Hygiene, 1(f,w)	Soils, 3(f,w)
Farm Arithmetic, 3(f,w)	Animal Biology, 3(f,w)
Market Livestock Production, 3(f,w)	Chemistry in Agriculture, 3(f,w)†
Drawing, 3(f,w)	Physical Education, 1(f,w)
Agricultural Botany, 3(f,w)	Electives, 6*
Physical Education, 1(f,w)	
Social Problems for Boys, 1(f,w)	
Electives, 2*	

JUNIOR YEAR

REQUIRED—FIRST TERM	REQUIRED—SECOND TERM
Business English, 3(f,w) or Debating, 3(w)	English Composition, 3(f,w)
Forage Crops, 3(f,w)	Grain Crops, 3(f,w)
Farm Horticulture, 3(f,w)	Farm Dairying, 3(f,w)
Dairy Stock Feeding, 3(f,w)	General Poultry Management, 3(f,w)
Livestock Feeding and Management, 3(f,w)	Physical Education, 1(f,w)
Physical Education, 1(f,w)	Electives, 6*
Electives, 3*	

* For elective courses, see pages 23 and 24.

† Not equivalent to high school chemistry.

COURSES OF STUDY

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SENIOR YEAR

REQUIRED—FIRST TERM

Public Speaking, 3(f,w)
 National Government, 3(f)
 Livestock Breeding, 3(f,w)
 Farm Management I, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 6*

REQUIRED—SECOND TERM

English VI, 3(f,w)
 State and Local Government, 3(w)
 Rural Sociology, 3(f,w)
 Farm Management II, 3(f,w)
 Crop Breeding, 3(w)
 Physical Education, 1(f,w)
 Electives, 3*

FARM MECHANICS

FRESHMAN YEAR

REQUIRED—FIRST TERM

English I, 3(f,w)
 Hygiene, 1(f,w)
 Farm Arithmetic, 3(f,w)
 Market Livestock Production, 3(f,w)
 Drawing, 3(f,w)
 Agricultural Botany, 3(f,w)
 Physical Education, 1(f,w)
 Social Problems for Boys, 1(f,w)
 Electives, 2*

REQUIRED—SECOND TERM

English Classics, 3(f,w)
 Mechanics and Water Supply, 4(f,w)
 Mechanical Training, 3(f,w)
 Woodworking, 3(f,w)
 Chemistry in Agriculture, 3(f,w)†
 Physical Education, 1(f,w)
 Electives, 2*

JUNIOR YEAR

REQUIRED—FIRST TERM

Business English, 3(f,w) or Debating, 3(f)
 Judging Breeds of Livestock, 3(f,w) or
 Livestock Feeding and Management,
 3(f,w)
 Gas Engines, 3(f,w)
 Soils, 3(f,w)
 National Government, 3(f)
 Physical Education, 1(f,w)
 Electives, 3*

REQUIRED—SECOND TERM

English Composition, 3(f,w)
 Grain Crops, 3(f,w) or Forage Crops,
 3(f,w)
 Farm Dairying, 3(f,w)
 Farm Implements, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 5*

SENIOR YEAR

REQUIRED—FIRST TERM

Public Speaking, 3(f,w)
 Farm Buildings, 3(f)
 Rural Sociology, 3(f,w)
 Farm Management I, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 6*

REQUIRED—SECOND TERM

English VI, 3(f,w)
 State and Local Government, 3(w)
 Farm Management II, 3(f,w)
 Tractors and Diesel Engines, 3(f,w) or
 Carpentry, 3(f,w) or
 Metal Working, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 6*

* For elective courses, see pages 23 and 24.

† Not equivalent to high school chemistry.

HORTICULTURAL AND NURSERY TRAINING

FRESHMAN YEAR

REQUIRED—FIRST TERM

English I, 3(f,w)
 Hygiene, 1(f,w)
 Farm Arithmetic, 3(f,w)
 Agricultural Botany, 3(f,w)
 Farm Horticulture, 3(f,w)
 Plant Propagation and Nursery
 Practice, 3(w)
 Social Problems for Boys, 1(f,w)
 Physical Education, 1(f,w)
 Electives, 2*

REQUIRED—SECOND TERM

English Classics, 3(f,w)
 Soils, 3(f,w)
 Drawing, 3(f,w)
 Floriculture, 3(f)
 Commercial Vegetable Gardening, 3(f)
 Physical Education, 1(f,w)
 Electives, 3*

JUNIOR YEAR

REQUIRED—FIRST TERM

Business English, 3(f,w) or Debating, 3(w)
 Chemistry of Plant and Animal Life I, 3(f)
 Animal Biology, 3(f,w)
 Landscape Gardening I, 2(f)
 Physical Education, 1(f,w)
 Electives, 7*

REQUIRED—SECOND TERM

English Composition, 3(f,w)
 Chemistry of Plant and Animal Life II, 3(w)
 Seed Testing, 2(w)
 Farm Forestry, 3(w)
 Physical Education, 1(f,w)
 Electives, 7*

SENIOR YEAR

REQUIRED—FIRST TERM

Public Speaking, 3(f,w)
 National Government, 3(f)
 Plant Diseases, 3(f)
 Insect Pests of Plants, 3(f)
 Physical Education, 1(f,w)
 Electives, 6*

REQUIRED—SECOND TERM

English VI, 3(f,w)
 State and Local Government, 3(w)
 Rural Sociology, 3(f,w)
 Bookkeeping I, 3(f,w)
 Small Fruit Growing, 3(w)
 Physical Education, 1(f,w)
 Electives, 3*

LIVESTOCK PRODUCTION

FRESHMAN YEAR

REQUIRED—FIRST TERM

English I, 3(f,w)
 Hygiene, 1(f,w)
 Farm Arithmetic, 3(f,w)
 Market Livestock Production, 3(f,w)
 Drawing, 3(f,w)
 Agricultural Botany, 3(f,w)
 Physical Education, 1(f,w)
 Social Problems for Boys, 1(f,w)
 Electives, 2*

REQUIRED—SECOND TERM

English Classics, 3(f,w)
 Soils, 3(f,w)
 Animal Biology, 3(f,w)
 Chemistry in Agriculture, 3(f,w)†
 Physical Education, 1(f,w)
 Electives, 6*

* For elective courses, see pages 23 and 24.

† Not equivalent to high school chemistry.

COURSES OF STUDY

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JUNIOR YEAR

REQUIRED—FIRST TERM

Business English, 3(f,w) or Debating, 3(w)
 Forage Crops, 3(f,w)
 Physiology and Hygiene of Breeding, 2(f)
 Livestock Feeding and Management, 3(f,w)
 Dairy Stock Feeding, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 4*

REQUIRED—SECOND TERM

English Composition, 3(f,w)
 Veterinary Studies, 3(f,w)
 Farm Dairying, 3(f,w)
 Judging Breed Types of Livestock, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 6*

SENIOR YEAR

REQUIRED—FIRST TERM

Public Speaking, 3(f,w)
 National Government, 3(f,w)
 Livestock Breeding, 3(f,w)
 Farm Management I, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 6*

REQUIRED—SECOND TERM

English VI, 3(f,w)
 State and Local Government, 3(w)
 Rural Sociology, 3(f,w)
 Farm Management II, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 6*

CROP PRODUCTION

FRESHMAN YEAR

REQUIRED—FIRST TERM

English I, 3(f,w)
 Hygiene, 1(f,w)
 Farm Arithmetic, 3(f,w)
 Social Problems for Boys, 1(f,w)
 Drawing, 3(f,w)
 Agricultural Botany, 3(f,w)
 Soils, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 2*

REQUIRED—SECOND TERM

English Classics, 3(f,w)
 Chemistry in Agriculture, 3(f,w)
 Grain Crops, 3(f,w)
 Forage Crops, 3(f,w)
 Market Livestock Production, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 3*

JUNIOR YEAR

REQUIRED—FIRST TERM

Business English, 3(f,w) or
 Debating, 3(w)
 Weeds, 2(f,w)
 Genetics and Eugenics, 3(f)
 Grain and Hay Grading, 2(f)
 Farm Horticulture, 3(f,w)
 Farm Management I, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 2*

REQUIRED—SECOND TERM

English Composition, 3(f,w)
 Seed Testing, 2(w)
 Potato Production, 3(w)
 Livestock Feeding and Management, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 7*

SENIOR YEAR

REQUIRED—FIRST TERM

Public Speaking, 3(f,w)
 National Government, 3(f)
 Rural Sociology, 3(f,w)
 Plant Diseases, 3(f)
 Insect Pests of Plants, 3(f)
 Physical Education, 1(f,w)
 Electives, 3*

REQUIRED—SECOND TERM

English VI, 3(f,w)
 State and Local Government, 3(f,w)
 Crop Breeding, 3(w)
 Farm Management II, 3(f,w)
 Dairy Stock Feeding, 3(f,w)
 Physical Education, 1(f,w)
 Electives, 3*

* For elective courses, see pages 23 and 24.

HOME ECONOMICS

The Home Economics Course is planned primarily to train girls for home making, but in addition it is possible for them to elect work along several different lines in preparation for wage earning. Certain hospitals will accept graduates of the School of Agriculture as probationers for the nurse's training. Courses in music give, to those who have special ability along that line, an opportunity to learn to conduct community singing, orchestras, and to give elementary instruction in music. Each girl makes her program under the direction of one of the members of the Home Economics faculty.

FRESHMAN YEAR

REQUIRED—FIRST TERM	REQUIRED—SECOND TERM
Related Science I, 3(f)	Related Science II, 3(f,w)
English I, 3(f,w)	English Classics, 3(f,w)
Selection and Preparation of Food, 3(f,w)	Meal Planning and Preparation, 3(w)
Introduction to Home Economics, 2(f,w)	Clothing Planning and Construction, 3(f,w)
Related Art, 3(f,w)	Physical Education, 1(f,w)
Physical Education, 1(f,w)	Electives, 6*
Social Training, 2(f,w)	
Electives, 4*	

JUNIOR YEAR

REQUIRED—FIRST TERM	REQUIRED—SECOND TERM
Business English, 3(f,w) or Debating, 3(w)	English Composition, 3(f,w)
Foods and Nutrition, 2(f)	Animal Biology, 3(f,w)
Textiles and Dressmaking, 3(f)	House Planning and Furnishing, 3(w)
Home Nursing and Hygiene I, 2(f,w)	American History, 3(f,w)
Physical Education, 1(f,w)	Child Development, 3(f,w)
Electives, 8*	Physical Education, 1(f,w)
	Electives, 3*

SENIOR YEAR

REQUIRED—FIRST TERM	REQUIRED—SECOND TERM
Public Speaking, 3(f,w)	English VI, 3(f,w)
National Government, 3(f)	State and Local Government, 3(w)
Household Buying, 2(f)	Home Nursing and Hygiene II, 2(w)
Physical Education, 1(f,w)	The Girl's Wardrobe, 3(w)
Rural Sociology, 3(f,w)	Home Management, 3(w)
Electives, 7*	Physical Education, 1(f,w)
	Electives, 4*

* For elective courses, see pages 23 and 24.

ELECTIVES

Open to All

FRESHMAN YEAR

Animal Biology, 3(f,w)	Harmony I, 2(f,w)
Chemistry in Agriculture, 3(f,w)	Chorus, 1(f,w)
Grain Crops, 3(f,w)	Violin, 1(f,w)
Forage Crops, 3(f,w)	Piano, 1(f,w)
Elementary Beekeeping I, 3(f,w)	Instrumental Music, 1(f,w)
Elementary Beekeeping II, 3(f,w)	Orchestra, 2(f,w)
Farm Horticulture, 3(f,w)	Voice, 1(f,w)
Plant Propagation and Nursery Practice, 3(w)	Harmony II, 2(f,w)
Floriculture, 3(f)	Harmony III, 2(f,w)
Landscape Gardening I, 2(f)	Choral Class, 2(f,w)
Landscape Gardening II, 2(w)	Appreciation of Music, 2(f,w)
Agricultural Botany, 3(f,w)	Band, 2(f,w)
General Poultry Management, 3(f,w)	Play Production, 2(f,w)
Poultry Judging and Marketing, 3(f,w)	Speech Art, 3(f,w)
Incubation, Brooding, and Breeding, 3(w)	Special Problems in Speech, 1(f,w)
Commercial Turkey Production, 2(w)	Spelling, 1(f,w)
Advanced Farm Arithmetic, 3(f,w)	Penmanship, 1(f,w)
Algebra I, 7(f,w)	Typewriting I, 3(f,w)
Algebra II, 7(f,w)	Stenography I, 3(f,w)
Geometry I, 7(f,w)	Bookkeeping I, 3(f,w)
Geometry II, 7(f,w)	Bookkeeping II, 3(f,w)
Elements of Music, 2(f,w)	Commercial Law, 3(f,w)
	Physiology, 3(w)

JUNIOR YEAR

Chemistry of Plant and Animal Life I, 3(f,w)§	Advanced Debating, 3(w)
Chemistry of Plant and Animal Life II, 3(f,w)§	Parliamentary Law, 2(f,w)
Genetics and Eugenics, 3(f)	Marketing, 3(f,w)
Farm Electrical Equipment, 3(w)	Industrial History, 3(f)
Farm Dairying, 3(f,w)	American History, 3(f,w)
Utilization of Meats, 3(w)	History of Civilization, 3(f,w)
Advanced Beekeeping, 3(f,w)	Farm Finance, 3(w)
Insect Pests of Plants, 3(f)	Typewriting II, 3(f,w)
Orchard Fruit Growing, 3(f)	Typewriting III, 3(f,w)
Small Fruit Growing, 3(w)	Typewriting IV, 3(f,w)
Business English, 3(f,w)	Stenography II, 3(f,w)§
Books and Reading, 3(f)	Stenography III, 3(f,w)
Special Problems in Horticulture, (w)	Stenography IV, 3(f,w)
Special Problems in Entomology, (w)	Stenography V, 3(f,w)
Debating, 3(w)	Office Practice, 3(f,w)
	Elements of Bacteriology, 3(w)§
	Psychology, 3(f,w)

SENIOR YEAR

Plant Diseases, 3(f)	English Literature II, 5(w)
Advanced Public Speaking, 3(w)	Economics, 3(f,w)
English Literature I, 5(f,w)	Leaders and Leadership, 3(f,w)

§ Courses should be elected by those who contemplate taking the nurse's training upon graduation.

Open to Agriculture Students Only

FRESHMAN YEAR

Gas Engines, 3(f,w)	Judging Breed Types of Livestock, 3(f,w)
Mechanical Training, 3(f,w)	Home Problems, 2(w)
Metal Working, 3(f,w)	Soils, 3(f,w)
Woodworking, 3(f,w)	
Market Livestock Production, 3(f,w)	

JUNIOR YEAR

Farm Implements, 3(f,w)	Dairy Stock Judging, 2(f,w)
Tractors and Diesel Engines, 3(f,w)	Farm Forestry, 3(w)
Mechanics and Water Supply, 4(f,w)	Commercial Vegetable Gardening, 3(f)
Heat and Electricity, 4(w)	Greenhouse Construction, Management, and Practice, 3(f)
Carpentry, 3(f,w)	Potato Production, 3(w)
Farm Butchering and Curing of Meats, 3(f,w)	Seed Testing, 2(w)
Livestock Feeding and Management, 3(f,w)	Weeds, 2(f)
Dairy Stock Feeding, 3(f,w)	Physiology and Hygiene of Breeding, 2(f)
Grain Grading and Judging, 3(f)	Veterinary Studies, 3(f,w)
	Dairy Testing, 1(w)

SENIOR YEAR

Farm Management I, 3(f,w)	Livestock Breeding, 3(f,w)
Farm Management II, 3(f,w)	Milk Production, 3(w)
Farm Buildings, 3(f)	Advanced Dairy Stock Feeding, 3(w)
Crop Breeding, 3(w)	Dairy Stock Selection, 3(f)

Open to Home Economics Students Only

FRESHMAN YEAR

Home Economics Units, (w) 3 units of 1 cred. each	Farm Arithmetic, 3(f,w)
Home Crafts, 3(w)	
Home Service, 3(f)	

JUNIOR YEAR

Decorative Needlework, 3(w)	Food Preservation, 3(f)
Millinery, 3(f)	Home Economics Projects, 1-3(f,w)
	Units in Agriculture (Horticulture, Poultry, Dairy), 1-3(f)

ADMISSION TO THE COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

Graduates of the School of Agriculture of the University of Minnesota who have completed the two summers of supervised farm work offered in the school course, one additional school year, and one additional summer's work, or the equivalent thereof, will be admitted to the College of Agriculture, Forestry, and Home Economics.

DESCRIPTION OF COURSES

AGRICULTURAL BIOCHEMISTRY

- A1-2. Chemistry of Plant and Animal Life I, II. The fundamental principles of chemistry necessary for an understanding of common daily phenomena. The scope of agricultural chemistry and the help which the farmer may expect from the chemical laboratories of the state are outlined. (Equivalent to high school chemistry.)
- A4. Chemistry in Agriculture. A survey discussion—lecture course indicating the important part that chemistry plays in agriculture and modern civilization. (Not the equivalent of high school chemistry.)

AGRICULTURAL ECONOMICS

- A21. Farm Management I (Farm Records and Accounts). Forms and procedure for recording inventories, cash receipts and expenses, crop acreages and yields, feed for livestock, farm produce used in the house, and other information concerning the farm business. Calculation of measures of earnings and of management efficiency. Practice in recording and analyzing a year's business for a Minnesota farm.
- A22. Farm Management II (Organization). Farm organization as related to types of farming, combinations of enterprises, crop rotation, soil management, fields and farmstead arrangement, and the efficient use of labor and equipment.

AGRICULTURAL ENGINEERING

- A10. Farm Implements. Studies of the selection, operation, and care of farm machinery, also the cost, depreciation, deficiency, and adaptability of the various machines to the work to be accomplished.
- A11. Gas Engines. Theory and practice work in gasoline and kerosene engines.
- A12. Tractors and Diesel Engines. Carburetor and Diesel type engines and tractors. Their adjustments, care, and operation.
- A16. Mechanical Training. General. Instruction and laboratory practice in rope splicing, knots, belt lacing, pulleys and shafting, soldering, electric wiring, and cement work.
- A17. Metal Working. Instruction and laboratory practice in pipe fitting, valves, forge work, cold metal work, oxyacetylene welding, brazing, cutting, and electric arc welding.
- A18. Mechanics and Water Supply. The mechanics of solids, liquids, and gases. Special emphasis is given to water supplies, water systems, sewage disposals, weather conditions, and forecasts. Laboratory work will be a part of this course.

- A19. Heat and Electricity. Heat and electricity as applied to home heating and lighting, with a study of electric batteries, motors, and other appliances. Laboratory work will be given.
- A20. Farm Electrical Equipment. Principles of electric motors and generators. Care and operation of electrical equipment.
- A21. Woodworking. Construction of practical projects in wood with information and practice on tool processes, saw filing, tool sharpening, painting, and glazing.
- A22. Carpentry. Instruction and practice in farm building construction, estimating, laying out and framing sills, joists, studs, rafters, and other parts of buildings.
- A31. Drawing. Sketching, lettering, conventional symbols, and training in pictorial drawing, and orthographic projection related to agriculture. Set of instruments not required.
- A32. Farm Buildings. Location, planning, construction, and maintenance of farm buildings.

AGRONOMY AND PLANT GENETICS

- A1. Grain Crops. Including the history, culture, judging, and uses of the important grain crops, including corn.
- A2. Forage Crops. A study of the characteristics, growing, harvesting, and storing of the important forage and silage crops.
- A3. Genetics and Eugenics. A study of laws of heredity with plants, animals, and human beings, inheritance of important characters in man, including physical abnormalities, mental deficiencies, intelligence, etc., and the relation of these principles to problems of race improvement.
- A5. Crop Breeding. Modern methods of breeding and propagating the various farm and horticultural crops with plans for growing and certifying pedigreed seed.
- A6. Grain Grading and Judging. The identification of the important varieties for the major farm crops and their regions of adaptation. A study and practice of the methods and standards of commercial grain and hay grading. Crops judging, including practice in comparative placings of samples of corn, small grain, and legume seed.

ANIMAL AND POULTRY HUSBANDRY

ANIMAL HUSBANDRY

- A1. Market Livestock Production. The livestock industry; demonstration of types and market classes of cattle, horses, sheep, and swine, and their relation to production; score card practice and the fundamentals of livestock judging.
- A2. Judging Breed Types of Livestock. The origin, present-day characteristics and adaptability of the breeds of cattle, horses, sheep, and swine. Practice in judging purebred animals.

- A4. Farm Butchering and Curing of Meats. Lectures, demonstrations, and practice in slaughtering and dressing animals and in cutting and curing meats.
- A5. Livestock Breeding. Livestock improvement and variation, heredity, environment, and selection as factors therein; line breeding, inbreeding, crossbreeding, and grading up; the purebred sire pedigree, registration; practical breeders' problems.
- A7. Utilization of Meats. Lectures on methods of utilizing cuts from the beef, pork, and lamb carcass; curing and storing meats for summer use; laboratory practice in preparing cuts of meat for cooking; sausage making, and lard rendering. (This course is intended primarily for women students.)
- A9. Livestock Feeding and Management. The important principles involved in the selection and preparation of feeds; methods of feeding beef cattle, swine, sheep, and horses. The business side of livestock production, buying and selling animals, housing, care, and sanitary measures; planning the livestock enterprise.

POULTRY HUSBANDRY

- A11. General Poultry Management. The poultry industry, its magnitude, advantages and disadvantages, seasonable market classes and breeds best adapted to egg production and to different markets, nutrition, feeds, feeding, winter egg production, houses and appliances, yards, prevention of disease.
- A12. Poultry Judging and Marketing. Lectures and laboratory practice in judging for standard requirements and selecting for production qualities; grading live and dressed poultry, candling and grading eggs for market.
- A13. Incubation, Brooding, and Breeding. Instruction in the principles and practice of incubation; feeding and management of growing chicks; breeding for flock improvement.
- A14. Turkey Production. Instruction in breeds, breeding, incubation, brooding and rearing, feeding and marketing of turkeys. Possible and probable profits, merits of different varieties, shelters for old and young, hatching, brooding, and marketing.

DAIRY HUSBANDRY

- A1. Dairy Stock Feeding. The principles of feeding. A study of feedstuffs, and formulation of rations for dairy animals.
- A2. Farm Dairying. Development of the dairy industry, breeds of dairy cattle, composition and properties of milk and milk products, dairy farm sanitation, care and operation of dairy farm equipment.
- A3. Dairy Stock Judging. Practice in judging dairy cattle both from the standpoint of the farmer who is interested in the production of dairy products for market and the breeder of purebred cattle.
- A5. Milk Production. A study of the problems in dairy herd management, raising of calves and young stock, and factors influencing the cost of producing milk.

- A6. Advanced Dairy Stock Feeding. An advanced course dealing with rations and special feeding problems.
- A7. Dairy Stock Selection. Characteristics of the dairy breeds, selection of breeding stock, valuation of pedigrees, and selection of sires.
- A8. Dairy Testing. Laboratory practice in use of the Babcock test and other simple tests for milk and milk products.

ENTOMOLOGY AND ECONOMIC ZOOLOGY

- A1. Animal Biology. Fundamental principles of animal life such as metabolism, respiration, digestion, growth, and reproduction. The more important groups of the animal kingdom and their relation to man.
- A4. Elementary Beekeeping I. Fundamentals of bee behavior and of beekeeping practice during spring and early summer; spring management. Swarming, swarm control, and increase.
- A5. Elementary Beekeeping II. Fundamentals of bee behavior and of beekeeping practice during late summer, fall, and winter. Production of extracted honey, comb honey, and wax. Feeding, requeening. Wintering of bees. Bee diseases.
- A6. Advanced Beekeeping. Commercial and out-apiaries. Migratory beekeeping. Package bees and nuclei. Home queen rearing. Marketing of honey.
- A16. Insect Pests of Plants. Life cycles of insect pests injurious to cultivated plants and methods of combating them.
- A18. Special Problems. Properly qualified students will be given opportunities to carry on individual work in biology, economic entomology, and beekeeping. In each case permission of the instructor must be obtained in advance.

FORESTRY

- A1. Farm Forestry. Planting and care of farm windbreaks, shelter belts, and woodlots. Seed collecting, storage, and germination problems. Preservative treatments for farm timbers and fence posts. Raising coniferous and deciduous seedlings.

HOME ECONOMICS

- A1. Introduction to Home Economics. A study of personal and family situations contributing toward maximum personal development.
- A2. Clothing Planning and Construction. A study of the student's clothing needs. The development of ability to choose designs, to use patterns, and to construct clothing and articles for school and home use.
- A4. Textiles and Dressmaking. The selection of suitable fabrics and designs for clothing. The construction of dresses or other garments for school and home use.
- A5. The Girl's Wardrobe. The application of design, textile, and economic knowledge to clothing problems. The construction of garments suited

- to the needs of the student. The planning and construction of children's clothing.
- A6. Decorative Needlework. Color and design applied to needlework, adapted to use in the making of clothing and household furnishings.
- A7. Millinery. Design, care, and renovation of hats, hat materials, and trimmings. Construction of different types of hats.
- A21. Related Art. The principles of design and color harmony applied to suitable clothing; furnishings and arrangement of rooms; craft problems.
- A26. House Planning and Furnishing. A consideration of the house in relation to the needs of the family. Consideration will be given to location, exterior design, convenient arrangement of floor space; selection of interior finish, wall and floor coverings, furniture, curtains, and pictures; furniture refinishing.
- A27. Home Economics Units. Unit I: The study of unusual dishes which add variety to meals, including preparation and marketing; Unit II: Foods used in other countries; Unit III: Desserts for various meals and foods for sale.
- A28. Home Crafts. The principles of design and color harmony are applied to articles made of wood, metal, paper, etc. Shop experiences are provided in the repair, maintenance, and refinishing of furniture and other household equipment.
- A31. Selection and Preparation of Food. A study of food in relation to its function, food combinations, planning of menus, and serving simple breakfasts and school lunches.
- A32. Meal Planning and Preparation. Emphasis on lunch or supper and dinner menus. Food combinations, marketing, and plans for meals on a family basis. Care and preservation of food.
- A33. Foods and Nutrition. A study of the food needs for optimum health of individuals and families.
- A34. Home Management. Discussion of the problems of the homemaker or manager with emphasis upon using material and human resources to the best advantage.
- A35. Child Care and Development. A study of the factors influencing the proper growth (mental and physical) of the small child, a discussion of the best literature and toys for children's use. Direct experience with observation of children in their own homes is provided.
- A36. Home Service. A study of the accepted forms of table service with emphasis on the duties of a waitress. Opportunities for experience in serving meals and parties.
- A37. Household Buying. A study of the availability, the market, the price, the basis for selection, and the methods of purchase of commodities in common use by the average person or family.
- A39. Food Preservation. A study of desirable standards for preserved foods for home use and for salable products. Development of skill in their preparation.
- A40. Home Economics Projects. Students may select a project in the home economics field with guidance, carry on independent work, report to the

- teacher at intervals, and make a final report. Credit will be granted according to the quality of the completed project.
- A50. Related Science I. A study of the interesting phenomena of everyday life, especially those relating to the home and scientific principles which explain them.
- A51. Related Science II. A study of certain science principles and applications that relate to foods, textiles and clothing, water, electricity, lighting, and simple machines found in the home.
- A52. Units in Agriculture (Poultry, Horticulture, Dairy). Unit I: Management of the farm flock including principles of brooding and rearing, feeding, housing, selection and culling, and factors affecting the market quality of poultry products. Unit II: Establishing and managing plantings of small fruits, with special reference to the possibilities of supplementing farm income from the sale of berries. Unit III: The preparation of dairy products on the farm with particular attention given to the manufacture of farm cheeses, butter, and ice cream.
- A73. Home Problems. The study of the selection of food; fundamental processes of cooking; adequate food for the family; financial management; selection and care of clothing; family and community relationships. This course is planned for young men.

HORTICULTURE

- A1. Farm Horticulture. Growing fruits, vegetables, and ornamentals for use on the farm. Location and planting of the orchard and garden and the culture of the important crops. Propagation of common plants. Culture and use of ornamentals.
- A2. Orchard Fruit Growing. Commercial orcharding with special consideration of the profitable management of an orchard on the Minnesota farm. Location; planting; selection of varieties; cultural systems; pruning; pest control; harvesting and marketing of fruit.
- A3. Commercial Vegetable Gardening. Growing of vegetable crops for market. Locating, planting, and care of the commercial garden; consideration of the important crops; marketing methods; types of glass structures, their uses, and the production of vegetables under glass.
- A4. Small Fruit Growing. A practical study of berry growing as a commercial enterprise in Minnesota and the Northwest, covering the establishing and managing of plantations of strawberries, raspberries, blackberries, gooseberries, currants, and grapes.
- A5. Plant Propagation and Nursery Practice. Methods of propagation of plants by seeds, cuttings, layers, grafting, and budding are studied. The principles of greenhouse management, transplanting, watering, and ventilation are studied.
- A7. Floriculture. A working knowledge of the culture and use of house plants, annuals, and perennials.
- A8. Landscape Gardening I. Most of the term will be devoted to a study of the trees and shrubs used in landscape planting. In the latter part of

- the term some attention will be given to the principles of landscape gardening.
- A9. Landscape Gardening II. Practice and principles of ornamental plantings as applied to the home and community, with special reference to the small place and the farmstead.
- A10. Greenhouse Construction, Management, and Practice. Construction and management of the greenhouse from the standpoint of the fruit, vegetable, or flower grower. Various crops in relation to types of glass construction. Practice work in crops in the greenhouse.
- A14. Potato Production. Growth, climatic requirements, regional distribution, standardization of varieties according to soil, climate, and markets. Identification, exhibiting, judging, handling of seed plots, certification, cultural methods, storage, and marketing.
- A15. Special Problems in Horticulture. Individual instruction in the various phases of horticulture adjusted to meet the needs of the student. Credit may be earned in one or more quarters.

PHYSICAL EDUCATION AND ATHLETICS

MEN

The Department of Physical Education and Athletics attempts to present to the student a well-rounded program embracing required physical education, interschool athletics, and intramural activities to provide for growth and development of the physical, psychological, social, and recreational abilities of each individual. A primary objective is the development of interests, abilities, attitudes, and appreciations for physical activities.

Intramural or interclass athletics are organized and established to provide the opportunity and enjoyment of participation in athletic activities for every student of the school. Student recreation and health is the purpose of the varied intramural program offering activity in diamondball, touchball, football, field meet, horseshoe, table tennis, archery, swimming, basketball, volleyball, track and field meet, boxing and wrestling tournaments.

Interscholastic competition in basketball, cross-country running, and wrestling with other schools of agriculture and colleges is an important part of the school program each term.

The various phases of the physical education and athletic program provide an opportunity for development of motor co-ordination and skill in the fundamental sports activities; leisure time recreational interests; and contribute to the development of a broad social background.

The required physical education course activities consist of the following:

- A1. Physical Education Activities. Development of skills and sports fundamentals; a comprehensive knowledge of rules, techniques, and strategies; body control; team play and co-operation; and the health habits and safety factors associated with these various physical activities. Fall term—diamondball, touch football, speedball, volleyball, tumbling, swimming; winter term—basketball, track, boxing, wrestling, volleyball, handball, marching, social games, tumbling, and pyramids.

- A2. Beginning Swimming. For those who cannot swim. Health and safety factors in the pool; developing confidence in the water; elementary strokes; artificial respiration.
- A3. Boxing. Stance and positions; leading, simple and combination blows, defensive and offensive tactics; ring strategy; scientific aspects of the sport and presentation as a means of exercise and development.
- A4. Social Games and Recreational Sports. Instruction in active and social games. An advanced course dealing with more intensive play and knowledge of badminton, handball, table tennis, shuffleboard, golf driving.
- A5. Sports Administration. Leadership, initiative factors in sports; development of play and recreation facilities; principles of physical education; practice in administration and organization of various athletic events; history of sports; rural recreation organizations.

WOMEN

This department offers a program of health and physical education planned to meet the needs of the students and to achieve the desirable outcomes of an activity program. A selected number of group, individual, and dual sports are offered to enable students to acquire skill and knowledge in the field of recreational activities. Students are encouraged to take work in folk dancing, gymnastics, and rhythmic activities to develop ease of movement, co-ordination, grace, and confidence. The importance of correct posture is stressed in all teaching and special help in posture correction is given individually. Hours are arranged for student G.A.A. activities including basketball, volleyball, archery, swimming, badminton, and baseball which afford an opportunity for making friends and developing better social qualities.

- A1. Team Games. An opportunity for experience in team games of field ball, diamondball, and volleyball (fall quarter); and basketball, hit pin baseball, and volleyball (winter quarter). Discussion of rules and techniques of various skills of each sport.
- A2. Recreational Games. Instruction in archery, shuffleboard, tenikoit, badminton, and table tennis.
- A3. Rhythmical Activities. Instruction in tap, folk dancing, and singing games.
- A4. Beginning Swimming. This is a course for those who do not know how to swim or are not at home in deep water. Instruction will be given in elementary strokes, diving, and water emergency measures.
- A5. Lifesaving and Water Front Safety. Instruction in junior and senior lifesaving tests and methods of water rescue which have been set up by the American Red Cross. Techniques and methods of teaching swimming at beach or camp, including instruction in organization and program—planning for all age levels.
- A6. Recreational Leadership. Instruction in organizing, conducting, and planning a program of recreational activities for various age levels. Knowledge of team games, individual sports, social games, and mixers, presented with the idea of developing teaching ability and leadership.

PLANT PATHOLOGY AND BOTANY

- A1. Agricultural Botany. The structure and life processes of economic plants and their relation to agricultural practices. Growth, absorption, food manufacture, reproduction, and respiration. The dependence of man and animals on green plants. The nature of fungi and bacteria, and their importance in causing disease and decay.
- A2. Seed Testing. The seeds of the common farm weeds, with special attention to those of noxious weeds. A set of seed cases is made and practice is given in testing seeds for purity and germination.
- A11. Plant Diseases. Important diseases of fruit, vegetable, and field crops in Minnesota, with emphasis on the nature of the cause and methods of control.
- A12. Weeds. Farm weeds with special emphasis on their identification, control, and eradication.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

- A1. Home Nursing and Hygiene I. Personal and community hygiene. Prevention and care of illness in the home; methods of improvising nursing equipment.
- A2. Home Nursing and Hygiene II. Hygiene requirement during infancy, childhood, womanhood. Preparation for maternity, care of infant, household emergencies.
- A8. Hygiene. Methods for promotion of health and prevention of disease will be considered with a view to acquainting the student with the fundamentals of right living and the individual and community activities against the spread of disease.

RHETORIC

- A1. English I. Methods of study, note-taking, writing examinations, use of library. Grammar. Supplementary reading.
- A2. English Classics. American and English authors.
- A3. Business English. Practice in various forms of correspondence and business forms.
- A4. English Composition. Paragraphs and themes of narration, description, and exposition.
- A5. Public Speaking. Voice exercise, platform department. Practice in delivery of memorized and extemporaneous speeches.
- A6. English VI. Exposition and argument. Gathering and outlining material.
- A14. Advanced Public Speaking. A continuation of Course A5. Selecting and organizing material for speeches and the presentation of speeches effectively before a given audience.
- A21-22. English Literature I, II. The history of English literature, with a study of selections. For students planning to enter the College of Agriculture, Forestry, and Home Economics.

- A23. Books and Reading. Interpretation of recent literature. The home library.
- A32. Debating. Gathering of evidence. Reasoning. Briefing. Debate.
- A33. Advanced Debating. Principles of argumentation and persuasion applied in debate.

SCHOOL (GENERAL)

- A1. Farm Arithmetic. Training in simple mathematical processes, applications of principles to problems requiring measurements of material, extension, capacity. Practical applications to farm and home life. Assists in the mathematics of the technical school courses.
- A2. Advanced Farm Arithmetic. Similar in outline to Course A1. Special emphasis on farming as a business.
- A4. Algebra I. Fundamental operations; properties of algebraic numbers, addition, subtraction, multiplication, division, factoring, simple equations, fractions.
- A5. Algebra II. Fractional equations, literal numbers, proportions, simultaneous equations, radicals, quadratics. Emphasis upon the development and use of formulae. Problems taken from fields allied to agriculture.
- A6. Geometry I. Parallel and perpendicular lines, triangles, loci, polygons, proportion, similar polygons. Theorems developed both inductively and deductively. In this term's work, emphasis is placed upon geometry as a reasoning process.
- A7. Geometry II. Inequalities, circles, numerical relations, areas, regular polygons. Special emphasis on those problems relating to farm life such as the calculation of areas, surveying, and problems taken from mechanics.
- A21. Elements of Music. Fundamental principles of musical notation, pitch, rhythm, musical terms, formation of major scales, sight reading, singing, and ear training.
- A22. Harmony I. Formation of minor scales, intervals, chord construction, ear training in rhythm and intervals. Musical terms. Chords applied to piano.
- A23. Chorus. Men's Glee Club, Girls' Glee Club, and quartets will be developed from among students of ability as shown through voice try-outs. One evening of group practice and two hours of individual practice a week. Definite assigned work will be given.
- A24. Violin. Elementary: Hoffman, *Kayser Etudes*, *Schradieck Scales*, *Solos in Comparison*. Intermediate: scales in all positions, Seveik, Mazas, Dont, compositions of medium difficulty. Advanced: Kreutzer, Fiorillo, Rode, Gavinie, sonatas of Handel, Gade, David, concertos of Viotti, DeBeriot, Mendelssohn. Ten thirty-minute lessons, \$6.55 per term.
- A25.* Piano. Elementary and advanced technical training, scales, arpeggios, octaves, chords, selected technical studies. Bach: *Inventions*, *Well-Tempered Clavicord*. Sonatinas: Clementi, Kuhlan, Sonatas: Haydn,

* Piano students may register for orchestra and receive training through piano quartet (two pianos), subject to the approval of the instructor.

- Mozart, Beethoven. Solos for all grades; classics and best modern material. Ten thirty-minute lessons, \$6.55 per term.
- A26. Instrumental Music. Band and orchestral instruments, such as cornet, clarinet, saxophone, trombone, baritone, alto, horn, tuba, etc., using standard textbook containing latest methods. Ten thirty-minute lessons, \$6.55 per term.
- A27.* Orchestra. Standard works in orchestral music. Special attention is given to interpretation, rhythm, phrasing, intonation, and sight reading.
- A28. Voice. Voice placing, breath development, enunciation, diction, illustrated by elementary studies and exercises by Sieber, Clippinger, Con Cone; songs of medium difficulty. Ten thirty-minute lessons, \$6.55 per term.
- A29. Harmony II. Formation and progression of triads, seventh and ninth chords, harmonizing a given bass.
- A30. Harmony III. Harmonizing simple melodies, cadences, modulations, transposition, accompaniment, writing, and melody building.
- A31. Choral Class. Fundamentals of voice production; i.e., breath control, acquiring freedom of the articulating muscles, resonance, pure vowel sounds, diction, sight singing, tone values, intervals. Emphasis given to chorus organization and directing. A comprehensive examination held at the end of each term.
- A32. Appreciation of Music. Brief history; biographies of well-known composers; and a knowledge of standard musical literature for the orchestra, band, chorus, solo work, and any combination or group of instruments or voices.
- A34. Band. Ensemble playing, sight reading, breathing, scales, intonation, phrasing, rhythm, and practical band experience is given. Best standard musical literature. Advanced methods in nonpressure tone production and attack. Three hours a week individual practice.
- A35. Play Production. Play reading and studies in dramatic literature. The problems of play production will be considered. Choosing of cast, rehearsals, general stage mechanics, i.e., scenery building, painting, lighting, costuming, make-up, etc. Students will take part in the management and direction of school production.
- A36. Special Problems in Speech. Individual lessons in public speaking, platform technique, interpretation, acting, stage craft, and speech defect. Ten thirty-minute lessons, \$6.50 per term.
- A37. Speech Art. Studies in interpretative reading and acting. Development of voice pitch range, force, quality, rhythm. This course will stress interpretation, its relation to declamation and the fundamentals of acting by classroom exercises.
- A40. Leaders and Leadership. Study of types of leaders, origins, social stimuli, personality, character, inhibitions, tact, system, and organization. An analysis of leaders, applied to rural activities and organizations.
- A41. Parliamentary Law. Principles of parliamentary law, how to organize a society, duties of officers, how to record proceedings, and how to

- conduct meetings. Students will be given practice under the direction of the instructor.
- A43. Economics. Fundamental laws governing production, consumption, distribution, and exchange. Principles of economics as applied to the farmers' relationships, as a producer and as a consumer. A discussion of wages, rent, and interest.
- A44. Marketing. Elementary principles to be considered in organizing a local co-operative. Types of marketing organizations both local and terminal. The marketing of perishables, semi-perishables, and staple commodities. A discussion of pooling and hedging.
- A45. Industrial History. The history of the development of industry in the United States with special emphasis upon the development of agriculture. Significance and relationship to present-day movements.
- A46. Rural Sociology. A practical course including a study of rural conditions, how to make a survey, the cause of present conditions and how they may be improved. Study of rural organizations, religions, and educational institutions.
- A47. American History. Causes and effects of great movements are emphasized. History of the westward migration, immigration, foreign relations, and special emphasis on our history since 1900.
- A48. History of Civilization. A survey of the social, political, and economic backgrounds of the ancient and medieval civilizations, contributions of their science, art, literature, laws, institutions, and thought to the present.
- A49. Farm Finance. Money and its use as a medium of exchange. Monometallism and bimetalism. Systems of credit and banking operations. A discussion of the agricultural credit system, the federal farm land banks, federal intermediate credit banks, Federal Reserve System.
- A53. National Government. National governmental machinery, functions, and finance, adding to the routine treatment some consideration of the modern tendencies and agencies of national control, regulation, and ownership.
- A54. State and Local Government. The state, county, town, and school district in their present-day aspects as social and economic agents of the people of Minnesota; state and local finance, considering the sources, uses, collection.
- A55. Social Training. Fundamental principles governing the individual in social contacts; attention to the rights and the responsibilities of the individual in institutional life; the home as the social center; discussion of problems arising in current social activities.
- A56. Social Problems for Boys. An open forum for the discussion of social conventions of home, school, and public life.
- A61. Spelling. Students poor in spelling should elect this course and continue until able to spell words in ordinary conversation and correspondence. A spelling text is used and drills on lists of commonly misspelled words are given.
- A62. Penmanship. A standard muscular movement system is taught. Students who are poor in penmanship should elect this course.

- A92. Psychology. A study of human activity and behavior as influenced by the reactions which the individual makes to his environment. A study of adjustments to new situations and development of personality.

BUSINESS COURSES

The object of these courses is to prepare students, whose services are not immediately required at home, for office work on the farm, in the village, or subordinate positions in regular business offices.

The subject-matter of these courses, combined with the courses in home-making and agriculture, gives the students a training which qualifies them to take positions as office assistants in farm bureaus, co-operative creameries, and local elevators.

- A80. Typewriting I. The touch method of typewriting is taught. Following the memorization and fingering of the keyboard, drills for acceleration, concentration, and rhythm are given.
- A81. Typewriting II. A continuation of carefully planned drills for the development of accuracy and speed. Work in tabulating, letter writing, and practice on different makes of typewriters, with their care.
- A82. Typewriting III. Business correspondence from the typist's viewpoint. Business letters and documents which help in gaining correct first impressions are studied and copied. Construction work requiring judgment in arrangement, and the exercising of initiative in solving original problems. Drills for the development of speed and accuracy are stressed.
- A83. Stenography I. Beginning material of *The Gregg Shorthand Manual* and co-ordinating articles in Alice Hunter's *Graded Readings* are studied. Suitable elementary material is dictated to the class.
- A84. Stenography II. Class continues the study of *The Gregg Shorthand Manual* and Alice Hunter's *Graded Readings*. Drills and dictation given in class.
- A85. Stenography III. The study of *The Gregg Shorthand Manual* and Alice Hunter's *Graded Readings* continued. Supplementary material is studied. Dictation of suitable material in class for the development of skill in the taking and reading of shorthand notes.
- A86. Bookkeeping I. Principles of double entry illustrated by keeping a set of books for a firm, making out the forms necessary for the various transactions, and closing the books.
- A87. Bookkeeping II. Takes up the partnership form of business organization and continues accounting principles. An advanced set of books is kept.
- A88. Commercial Law. Elementary principles governing contracts, a discussion of insurance, wills, deeds, mortgages, stocks, and bonds. Reference made to types of business organizations such as partnerships and corporations. Safe investments and the proper use of credit. Use of negotiable instruments.
- A89. Typewriting IV. Course concentrates on the development of accuracy and speed in typing. Letters dictated to machine. Instructions given on the cutting of mimeograph stencils.

- A90. Stenography IV. Completion of *The Gregg Shorthand Manual*. Study of much correlated supplementary material. Dictation and transcription work.
- A91. Stenography V. Study of *Speed Studies* and advanced shorthand material. Much dictation of material at increasing rates of speed to develop shorthand skill. Accuracy of transcribing from shorthand notes emphasized.
- A92. Office Practice. Actual office methods and practice as well as apprentice work in various offices on the University Farm campus, and use of office appliances, such as dictaphone, mimeograph machine, and comptometer.

SOILS

- A1. Soils. Minnesota soils, their formation, properties, and characteristics. Treatment of lime-deficient, alkali, and peat soils. Farm manures, green manures, and commercial fertilizers. Laboratory demonstrations, examination of soils, and discussion of soil problems.

VETERINARY MEDICINE

- A1. Physiology. The purpose of the course is to give an intelligent conception of the various organs and systems of the body; how they function and how managed for continued health and efficiency.
- A4. Elements of Bacteriology. Lectures and demonstrations of the fundamental principles underlying the science of bacteriology, with special reference to organisms which cause disease. The use of vaccines, bacterines, antitoxins, immune sera.
- A5. Physiology and Hygiene of Breeding. Gross anatomy of the reproductive organs; physiology of reproduction; the breeding season; gestation and care of the female during parturition and lactation.
- A7. Veterinary Studies. The animal body in health and disease; causes, prevention, and management of disease including common parasitic diseases.

NOTICE TO PROSPECTIVE STUDENTS

Please read the bulletin carefully, noting the paragraphs headed How To Get to the School, Admission, Home Life on the Campus, and Expenses. If you plan to enter the school, send to superintendent, University Farm, St. Paul, for an admission blank. Please do NOT send DIPLOMAS. In case you have had any work of HIGH SCHOOL grade, be sure to have it recorded on the blank or send certificates covering the work done.

If you desire a room in the dormitory, send with your admission blank to the superintendent a money order or draft for \$2 made payable to University of Minnesota, Department of Agriculture. In case your application is received after all space in the dormitories is assigned, your money will be returned to you. If you decide after making application that you cannot enter the school, you should notify the superintendent as soon as possible. Students are strongly urged to reserve rooms in advance.

The Bulletin *of the University of* **Minnesota**

The College of Education
Announcement of Program
of
Late Afternoon
and
Saturday Morning Classes
1938-1939



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UNIVERSITY CALENDAR

1938-39

Fall Quarter

1938			
September	19-23		Examinations for removal of conditions
September	21-24		Freshman Week
September	22-23		Registration, College of Education
September	22-23	}	Registration days for teachers in service*
Sept. 26-Oct. 1			
September	26	Monday	Fall quarter classes begin
October	15	Saturday	Homecoming Day
November	5	Saturday	Dad's Day
November	24	Thursday	Thanksgiving Day; a holiday
December	12-17		Final examination period
December	15	Thursday	Commencement Convocation
December	17	Saturday	Fall quarter ends, 6:00 p.m.

Winter Quarter

1939			
January	3-4		Registration, College of Education
January	3-4 & 5-7		Registration days for teachers in service*
January	5	Thursday	Winter quarter classes begin
February	13	Monday	(Sunday, February 12, Lincoln's Birth- day), a holiday
February	22	Wednesday	Washington's Birthday; a holiday
March	20-25		Final examination period
March	23	Thursday	Commencement Convocation
March	25	Saturday	Winter quarter ends, 6:00 p.m.

Spring Quarter

Mar. 31, Apr. 1			Registration, College of Education
Mar. 31-Apr. 8			Registration days for teachers in service*
April	3	Monday	Spring quarter classes begin
April	7	Friday	Good Friday; a holiday
May	6	Saturday	Mother's Day
May	11	Thursday	Cap and Gown Day Convocation
May	30	Tuesday	Memorial Day; a holiday
June 9-10 & 12-16			Final examination period
June	11	Sunday	Baccalaureate service
June	16	Friday	Spring quarter ends, 6:00 p.m.
June	17	Saturday	Sixty-seventh annual commencement

* Teachers in service will be allowed to register in the College of Education during the first week of classes without penalty. After that period a late fee of \$2 will be charged.

DIRECTORY OF ADMINISTRATIVE OFFICERS

	Room
W. E. Peik, Dean of the College of Education	204Bu
Marcia Edwards, Assistant to the Dean of the College of Education	202Bu
Jean Alexander, Chairman, Students' Work Committee	206Bu
W. S. Carlson, Director of Student Teaching	103Ed

The following program of late afternoon and Saturday classes is arranged by the College of Education for teachers in service. Many of the offerings are required subjects in the regular course of training for high school teachers or in the specialized curricula. Students expecting to qualify for a degree should secure a copy of the College of Education Bulletin Announcement of Courses, which contains a statement of general requirements for graduation, required courses in majors and minors, and the specialized curricula. Students should consult a major adviser as early in their course as possible. Failure to do so often delays graduation and makes extra work necessary.

The small letter f after a course number indicates that the course is taught in the fall quarter; w indicates winter quarter; s indicates spring quarter.

Bulletin changes and room schedules will be posted each quarter on the official bulletin board outside the door of Room 210 Burton Hall.

QUALIFYING EXAMINATION SCHEDULE

FALL QUARTER:			
September 27	Tuesday	Major 1B	4:30-6:30 p.m.
September 28	Wednesday	Major 1A	4:30-6:30 p.m.
September 29	Thursday	English General	4:30-6:30 p.m.
September 30	Friday	Education	4:30-6:30 p.m.
November 30	Wednesday	Major 1B	4:30-6:30 p.m.
December 1	Thursday	Major 1A	4:30-6:30 p.m.
December 2	Friday	English General	4:30-6:30 p.m.
December 3	Saturday	Education	1:30-3:30 p.m.
WINTER QUARTER:			
March 8	Wednesday	Major 1B	4:30-6:30 p.m.
March 9	Thursday	Major 1A	4:30-6:30 p.m.
March 10	Friday	English General	4:30-6:30 p.m.
March 11	Saturday	Education	1:30-3:30 p.m.
SPRING QUARTER:			
May 10	Wednesday	Major 1B	4:30-6:30 p.m.
May 12	Friday	Major 1A	4:30-6:30 p.m.
May 13	Saturday	English General	1:30-3:30 p.m.
May 26	Friday	Education	4:30-6:30 p.m.

PSYCHOLOGICAL EXAMINATIONS

The psychological examinations, which are general examinations designed to show a student's capacity to pursue professional curricula in education, are required of both classified and unclassified undergraduate students of education, and are considered a prerequisite to graduation. They are offered Wednesday, Thursday, Friday, and Saturday, September 21, 22, 23, and 24, and at the beginning of the winter and spring quarters. They will also be given on a Saturday afternoon at the beginning of each quarter for teachers in service and others who are unable to attend during the week.

PROGRAM

1938-1939

GENERAL COURSES

No.	Title	Hour	Day	Bldg.	Instructor
Ed.104f	Adult Education (2 cred.; jr., sr., grad.)	III-IV	S	100Pt	Mr. Dickerman
Ed.105s	Visual Aids in Teaching (2 cred.; jr., sr., grad.)	III-IV	S	106Pt	Miss Clark
Ed.133f	Guidance in Secondary Schools (2 cred.; sr., grad.; prereq. 9 hrs. in ed.)	III-IV	S Ar		Miss Edwards, Miss Wright
Ed.167s	Junior High School (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51)	III-IV and 1 hr. ar.	S	100Pt	Mr. Carlson

For Graduate Students Only

Ed.208w	Methods in Educational Research (2 cred.; grad.)	IX-X	M	114Ed	Mr. Johnson
Ed.224f-225w-226s	Seminar in Elementary School Problems	IX	Th	209Bu	Mr. Brueckner, Mr. Bond
Ed.228f-229w-230s	Problems of College Education (6 cred.; grad.)	Ar	Ar	Ar	Mr. McConnell and others
Ed.233f,w,s	Problems in Guidance and Personnel Work (Cred. ar.)	Ar	Ar	Ar	Mr. Wrenn, Miss Edwards
Ed.241f-242w-243s	Problems in the History of Education (2 cred. a qtr.; prereq. permission of instructor)	Ar	Ar	Ar	Mr. Wesley
Ed.250f	Higher Education in the United States (3 cred.; prereq. 15 hrs. in ed.)	I-II 1 hr. ar.	S	114Ed	Mr. McConnell
Ed.251w	Curriculum and Instruction in Higher Education (3 cred.; prereq. same as for 250)	III-IV 1 hr. ar.	S	114Ed	Mr. McConnell
Ed.254s	Measurement and Evaluation in Higher Education (3 cred.; grad.; prereq. same as for 250)	I-II	S	100Pt	Mr. Johnson
Ed.285f	Professional Education of Teachers (2 cred.; grad.; prereq. 15 hrs. in ed.)	III-IV	S	205bEd	Mr. Peik
Ed.286f,w,s	Problems in Teacher Training (2 cred. a qtr. including 285 or permission of instructor)	Ar	Ar	Ar	Mr. Peik
Ed.287w	Instruction and Administration in Teacher Training Institutions (2 cred.; grad.; prereq. 15 cred. in ed.)	I-II	S	205bEd	Mr. Peik

ART EDUCATION

Major advisers.—Professor Raymond; Associate Professor Hilpert.

GROUP A—DESIGN

No.	Title	Hour	Day	Bldg.	Instructor
ArtEd.153-154-155Ef	Art in Society (9 cred.; sr., grad.) 153—The Home—Not offered 154—Costume—Not offered 155Ef—Painting, Sculpture, Architecture, Ceramics	4:00-5:00 and III-IV	W S	207bJ	Mr. Torbert

GROUP B—HANDICRAFTS

No.	Title	Hour	Day	Bldg.	Instructor
ArtEd.32Af	Cardboard and Paper Products (1 cred.; prereq. or coincident one course in Group A)				
	Lect. and demon.	IV	S	10J	Miss Ross
	Lab.	Ar			
ArtEd.37w	Reed and Raffia (1 cred.; prereq. or coincident one course in Group A)				
	Lect. and demon.	IV	S	10J	Miss Ross
	Lab.	Ar			
ArtEd.38s	Simple Textile Processes (1 cred.; prereq. or coincident one course in Group A)				
	Lect. and demon.	IV	S	10J	Miss Ross
	Lab.	Ar			

GROUP C—REPRESENTATION

ArtEd.23w,s	Composition Clinic (2 cred.)	Ar	Ar	Ar	Mr. Torbert
ArtEd.24f,w,s-26f,w,s-28f,w,s	Drawing from Still Life and Pose (Continuation of 4-6-8) (2 cred. each)				
	Sec. 1	I-II	TTh	203J	Miss Lutz
	2	III-IV	TTh	203J	Miss Lutz
	3	IV-V	S	203J	Miss Lutz
ArtEd.29f,w,s-30f,w,s	Rhythmic Sketch—Simple recordings on blackboard and paper, helpful in public schools (1 cred. a qtr.; no prereq.)				
		I-II	S		Mr. Torbert
ArtEd.61,62,63f,w,s	Painting in Relation to Architectural, Industrial, and Dramatic Demands (2 cred. each)				
	Sec. 1	I-II	TTh		Miss Lutz
	2	III-IV	TTh		Miss Lutz
	3	I-IV	S		Miss Lutz
ArtEd.66,67,68f,w,s	Painting (Continuation of 61,62,63)				
		I-IV	S and ar		Miss Lutz
ArtEd.124E-125E-126Ef,w,s	Advanced Painting (2 to 6 cred.)	Ar	Ar	Ar	

GROUP D—APPRECIATION

Tours to stores and galleries are arranged in connection with all courses.

For History of Art see offerings in Fine Arts, Architecture, and Home Economics.

ArtEd.57w,s-58w,s	Art and Leisure—Participation in cultural advantages of Twin City galleries and auditoriums (1 cred. each)				
	Tutorial conferences and tours	Ar	Ar	Ar	
ArtEd.153-154-155Ef	Art in Society (See Group A)				

GROUP E—PROFESSIONAL COURSES

ArtEd.284Ew	Reading and Research in Art Education (3 cred.; grad.)				
		4:00-5:00	F	207bJ	Mr. Faulkner
		I-II	S	207bJ	
ArtEd.290Ef,291Ew,292Es	Special Problems in Art Education	Ar	Ar	Ar	

CURRICULUM AND INSTRUCTION

Major advisers.—Professors Brueckner and Peik; Assistant Professor Bond.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.C.I.63f	Children's Literature (2 cred.; jr., sr.)	IX-X	M	106Pt	Miss Smith

No.	Title	Hour	Day	Bldg.	Instructor
Ed.C.I.113w	High School Curriculum (2 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51)				
		IX-X	T	210Bu	Ar
Ed.C.I.122s	Literature for Adolescents (2 cred.; jr., sr., grad.; prereq. Ed. 53 or junior-senior high school teaching experience)				
		IX-X	T	UHSLib	Miss Smith
Ed.C.I.135w	Teaching of Occupations (2 cred.; sr., grad.; prereq. 9 hrs. in ed.)				
		III-IV	S	PtAud	Miss Edwards, Miss Wright
Ed.C.I.143f†	Teaching of Reading in the Elementary School (2 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 51A)				
		I-II	S	100Pt	Mr. Bond
Ed.C.I.144w†	Teaching of Reading in the Upper Grades and Junior and Senior High Schools (2 cred.; sr., grad.; prereq. same as for 143)				
		I-II	S	100Pt	Mr. Bond
Ed.C.I.145s	Remedial Reading (2 cred.; prereq. Ed.C.I. 143 or 144 or 159)				
		I-II	S	221Bu	Mr. Bond
Ed.C.I.153s	Supervision and Teaching of English in the Elementary Schools (2 cred.; sr., grad.; prereq. Ed. 61A,B,C, or equiv.)				
		I-II	S	204aEd	Miss Smith
Ed.C.I.155s	Supervision and Teaching of Arithmetic (2 cred.; sr., grad.; prereq. Ed. 61C or equiv.) (See Ed.C.I. 148, 149)				
		IX-X	T	204bEd	Mr. Brueckner
Ed.C.I.157f,w,s‡	Practice in Supervision (3 cred. a qtr.; sr., grad.; prereq. consent of instructor)				
		Ar	Ar	Ar	Mr. Brueckner
Ed.C.I.159w	The Supervision and Teaching of Reading (2 cred.; sr., grad.; prereq. Ed. 61A,B,C, or equiv.)				
		IX-X	W	106Pt	Mr. Bond
Ed.C.I.162f	Significance of Progressive Education (2 cred. per qtr.; sr., grad.)				
		IX-X	T	204bEd	Mr. Brueckner
Ed.C.I.168s	Current Developments in the Social Studies (2 cred.; grad. only)				
		III-IV	S	205aEd	Mr. Wesley
Ed.C.I.172s	Curriculum and Course of Study Construction (2 cred.; sr., grad.; prereq. 15 hrs. in ed.)				
		IX-X	T	112Bu	Mr. Bond
Ed.C.I.173f	Recent Research and Literature in Reading (2 cred.; sr., grad.; prereq. previous training in reading such as Ed.C.I. 159 or equiv.)				
		Ar	Ar	Ar	Mr. Bond
Ed.C.I.184f	Supervision of Student Teaching (2 cred.; sr., grad.)				
		III-IV	S	111Ed	Mr. Carlson
Ed.C.I.188s‡	Advanced Course in Methods of Teaching Modern Languages (2 cred.; sr., grad.; prereq. Ed.T. 72A-B-C, or experience in teaching the modern languages)				
		Ar	Ar	208Ed	Miss Walker
Ed.C.I.191s‡	Advanced Course in the Teaching and Supervision of Secondary School Mathematics (2 cred.; prereq. Ed. 51C or permission of instructor)				
		I-II	S	115Ed	Mr. Drake
Ed.C.I.198w	Recent Literature in Methods and Curriculum in English (2 cred.; sr., grad.; prereq. Ed.T. 66A-B-C, or equiv.) (Students should not register for this course in the same year with Ed.C.I. 294)				
		III-IV	S	204aEd	Miss Smith

For Graduate Students Only

Ed.C.I.201f-202w-203s†‡	Problems in Teaching the Social Studies (2 cred. a qtr.; grad.; prereq. consent of instructor)				
		4:00	T		Mr. Key, Mr. Wesley

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

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

No.	Title	Hour	Day	Bldg.	Instructor
Ed.C.I.222f-223w-224s	Seminar in the Technique of High School Instruction (No cred.; grad.; prereq. Ed. 51C and Ed.C.I. 113)	IX-X	Th	204bEd	Miss Smith, Mr. Johnson, Mr. Wesley
Ed.C.I.225f,w,s	Special Problems in Supervision of Instruction in Secondary Schools (2 cred. a qtr.)	Ar	Ar	218Bu	Mr. Boardman
Ed.C.I.261f,w,s	Special Problems in School Supervision (2 cred.; prereq. 10 hrs. in ed. including Ed. 51A)	III-IV	S	220Bu	Mr. Brueckner
Ed.C.I.263f	Recent Research in Arithmetic Instruction (2 cred.; prereq. Ed.C.I. 156 or 148 or 149 or equiv.)	I-II	S	204bEd	Mr. Brueckner
Ed.C.I.264w	Recent Research in Educational Diagnosis (2 cred.; prereq. Ed.C.I. 151 or equiv.)	I-II	S	204bEd	Mr. Brueckner
Ed.C.I.265s	Recent Literature in Supervision (2 cred.)	I-II	S	204bEd	Mr. Brueckner
Ed.C.I.266s	Supervision of High School Instruction (3 cred. This course is part of a three-quarter sequence. For fall and winter courses see Ed.Ad. 264-265. Students may register for any quarter.)	III-IV 1 hr. ar.	S	111Bu	Mr. Boardman
Ed.C.I.271f,w,s	Problems in Curriculum (2 or 3 cred. a qtr. with a maximum of 6; prereq. completion or current enrolment in one of the following: Ed.C.I. 113, 119, 172 or equiv.)	Ar	Ar	Ar	Mr. Archer
Ed.C.I.287f‡	Advanced Course in Teaching of Science (2 cred.; sr., grad.; prereq. Ed. 51C)	IX-X	T	114Ed	Mr. Johnson
Ed.C.I.293s	Foundations of Secondary School Methods (3 cred.)	IX-X and 1 hr. ar.	T	202Ed	Mr. Johnson
Ed.C.I.294f‡	Advanced Course in Methods of Teaching English (2 cred.; prereq. Ed.T. 66A-B-C or equiv.)	III-IV	S	204aEd	Miss Smith
Ed.C.I.296w-297s	Special Problems in Techniques of Secondary School Instruction (2 cred. a qtr.; grad.)	Ar	Ar	206Bu	Miss Smith

EDUCATIONAL ADMINISTRATION

Major advisers.—Professors Neale and Boardman.

Note.—This section includes courses formerly listed under Administration and Supervision. For other courses see General Courses, and Curriculum and Instruction.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.Ad.115w	Organization of the Elementary School (2 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.)	III-IV	S	111Ed	Mr. Neale
Ed.Ad.124f	Public School Administration (3 cred.; sr., grad.; prereq. 10 hrs. in ed.)	IX	MWF	210Bu	Mr. Neale
Ed.Ad.125w	Techniques in Administration (3 cred.; sr., grad.; prereq. 124)	IX	MWF	210Bu	Mr. Neale
Ed.Ad.126s	School Plant Management (3 cred.; sr., grad.; prereq. 124, 125)	IX-X 1 hr. ar.	M	224Bu	Mr. Neale
Ed.Ad.180f,w,s‡	Practice in High School Administration (6 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51C)	Ar	Ar	Ar	Mr. Boardman

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

For Graduate Students Only

No.	Title	Hour	Day	Bldg.	Instructor
Ed.Ad.210s	Financial Aspects of Public School Business Administration (3 cred.; prereq. 124, 125)	I-II 1 hr. ar.	S	224Bu	Mr. Neale
Ed.Ad.218f-219w-220s	Seminar in Secondary School Problems	IX-X	Th	218Bu	Mr. Boardman
Ed.Ad.228f,w,s	Special Problems in Educational Administration (1 or 2 cred.; prereq. 124, 125)	Ar	Ar	224Bu	Mr. Neale
Ed.Ad.230f-231w	Public Relations for Schools (4 cred.; grad.)	I-II	S	224Bu	Mr. Neale
Ed.Ad.235f-236w-237s	Seminar in Educational Administration	Ar	Ar	224Bu	Mr. Neale
Ed.Ad.264f-265w	High School Administration (3 cred. a qtr.; grad. For third quarter continuation of this course see Ed.C.I. 266. Students may register for any quarter.)	III-IV 1 hr. ar.	S	111Bu	Mr. Boardman
Ed.Ad.270f,w,s	Special Problems in Secondary Education (2 cred.)	Ar	Ar	218Bu	Mr. Boardman
Ed.Ad.278f	School Surveys (3 cred.; grad.)	Ar	Ar	224Bu	Mr. Neale

EDUCATIONAL PSYCHOLOGY

Major advisers.—Professors Miller, Johnson, McConnell, Wrenn; Associate Professor Van Wagenen.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.Psy.60f	Introduction to Statistical Methods (2 cred.; jr., sr.; prereq. 6 cred. in psy.)	I-II	S	PtAud	Miss Wilder
Ed.Psy.113f-114w-115s	Psychology of Elementary School Subjects (2 cred. per qtr.; jr., sr., grad.; prereq. 10 cred. in psy. and ed.)	IX-X	W	109Psy	Mr. Van Wagenen
Ed.Psy.116w-117s	Statistical Methods in Education (4 cred.; sr., grad.)	IX-X	T	115Psy	Mr. Van Wagenen
Ed.Psy.120w	Basic Principles of Measurement (3 cred. See 120f)	I-II 1 hr. ar.	S	205bEd	Mr. Wrenn
Ed.Psy.142s	Construction and Use of Individual Aptitude Tests (3 cred.; sr., grad.; prereq. 120 or equiv.)	4:30-5:45	TTh	115Psy	Mr. Cook
Ed.Psy.146w-147s†	Child Guidance (4 cred.; jr., sr., grad.; prereq. 15 cred. in psy. and ed.)	I-II	S	106Pt	Mr. Brown
Ed.Psy.149f-150w†-151s	Psycho-educational Clinic (2 to 6 cred.; sr., grad.; permission of instructor; prereq. 120, 140 and 141 or 142)	Ar	Ar	216Bu	Mr. Cook
Ed.Psy.158f	Psychology of Adolescence (3 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.)	IX-X	Th	210Bu	Mr. Archer
Ed.Psy.184s	Mental Deficiency (2 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.)	IX-X	W Ar		Mr. Cook

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

For Graduate Students Only

No.	Title	Hour	Day	Bldg.	Instructor
Ed.Psy.201f-202w-203s	Seminar in Educational Psychology	Ar	Ar	301Psy	Mr. Miller, Mr. Johnson, Mr. McConnell, Mr. Wrenn, Mr. Bond, Miss Edwards, Mr. Van Wagenen
Ed.Psy.225s	Diagnosis and Counseling in Guidance (3 cred.; prereq. Ed. 133 and Ed. Psy. 120 or equiv.)	IX	MWF	115Psy	Mr. Wrenn
Ed.Psy.240f,w,s	Problems in Measurement (2 cred. a qtr.)	Ar	Ar	Ar	Mr. Johnson
Ed.Psy.253f-254w-255s	Research Problems (Ar.; prereq. consult instructor) (See also Ed. 233 and Ed.Psy. 240)	Ar	Ar	Ar	Mr. Miller, Mr. McConnell, Mr. Bond, Mr. Van Wagenen
Ed.Psy.281f,w,s	Practice in Personnel Work (2 cred. a qtr.; prereq. satisfactory preparation in psy. and ed. and approval of adviser)	Ar	Ar	Ar	Miss Edwards, Mr. Wrenn
Ed.Psy.293Tw	Psychology of Learning (3 cred. a qtr.; prereq. 12 cred. in psy. and ed. psy. For teachers and administrators)	III-IV	S	100Pt	Mr. McConnell and others

HOME ECONOMICS EDUCATION

For courses in Home Economics Education available to teachers in service consult one of the major advisers, Wylle B. McNeal, Clara M. Brown, or Ella J. Rose.

INDUSTRIAL EDUCATION

Major adviser.—Professor Homer J. Smith.

No.	Title	Hour	Day	Bldg.	Instructor
Ind.11f,w,s‡	Special-Class Woodwork (2 cred.; no prereq.; not open to those in bench woodwork or cabinet making; for teachers of art, subnormal and primary grade work. Not a part of the four-year curriculum) (Limited to 24)	I-IV	S	6Pt	who have credit
Ind.30f	Graphic Presentation (2 cred.; no prereq.)	I-IV	S	6Pt	
Ind.40f	Analysis (2 cred.; no prereq.)	IX-X	W		
Ind.42w	Course Organization (2 cred.; prereq. Ind. 40)	IX-X	M	112Bu	Mr. Widdowson
Ind.44s	Equipment and Management (2 cred.; prereq. Ind. 40, 42)	IX-X	M	112Bu	Mr. Widdowson
Ind.50Af-50Bw-50Cs‡§	Directed Teaching (6 cred.; sr.; prereq. Ind. 70 or 75, and 80)	Ar	Ar	6Pt	Mr. Widdowson

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

§ Passing the qualifying examination is prerequisite to registration in this course.

No.	Title	Hour	Day	Bldg.	Instructor
Ind.60f	Philosophy of Vocational Education (2 cred.; no prereq.)	IX-X	Th	112Bu	
Ind.61w	Practices in Vocational Education (2 cred.; prereq. Ind. 60)	IX-X	Th	112Bu	
Ind.65‡	<i>Non-vocational Subjects</i> (Not a part of the four-year curriculum) (<i>Not offered</i>)				
Ind.66w	Related Subjects (2 cred.; prereq. Ind. 40, 42)	IX-X	F	112Bu	
Ind.70s‡	Methods in Shop Subjects (2 cred.; prereq. Ind. 40, 42)	IX-X	Th	112Bu	
Ind.75s‡	Methods in Drawing (2 cred.; prereq. 10 cred. in drawing or consent of instructor. Not a course in drawing)	IX-X	W	112Bu	
Ind.80f	General Industrial Training (2 cred.; no prereq.)	IX-X	T	112Bu	
Ind.81w	The General Shop (2 cred.; jr., sr.; prereq. Ind. 80. Not a shop course)	IX-X	T	112Bu	
Ind.101f	Tests in Industrial Subjects (2 cred.; prereq. Ed. 51A)	III-IV	S	Ar	
Ind.103w	Instructional Aids (2 cred.; sr., grad.; prereq. Ind. 40, 42)	III-IV	S	Ar	
Ind.107w	Co-ordination (2 cred.; jr., sr., grad.; prereq. Ind. 60, 61 or 105 or consent of instructor)	IX-X	W	Ar	
Ind.108s	Apprenticeship (2 cred.; jr., sr., grad.; prereq. same as for 107)	IX-X	T	Ar	
Ind.115s	Supervision of Industrial Education (2 cred.; sr., grad.; prereq. Ind. 60, 80 Ed.Ad. 124 or consent of instructor. Not a part of the four-year curriculum. For advanced students in the specialty and for students of administration and supervision)	III-IV	S		
Ind170f	Day Industrial Schools (2 cred.; jr., sr., grad.; prereq. Ind. 60, 61)	IX-X	T	112Bu	Mr. Craigo
Ind.171w	Evening Industrial Schools (2 cred.; jr., sr., grad.; prereq. Ind. 170)	IX-X	T	112Bu	
Ind.172s	Part-time Education (2 cred.; jr., sr., grad.; prereq. Ind. 170, 171)	IX-X	T	112Bu	

For Graduate Students Only

Ind.200f,w,s	Research Problems (3 to 9 cred.; prereq. consent of instructor)	IX	F	Ar	Mr. Smith
Ind.250f-251w-252s	Problems in Vocational Education (6 cred.; prereq. consent of instructor. Plan for full year)	I-II	S	Ar	Mr. Smith

Shop and Drawing Courses—arranged by Mr. Smith.

Shop and drawing courses are available in wide variety in the Institute of Technology, University campus, and the Division of Agricultural Engineering, Farm campus. Students may elect to pursue courses, day or evening, at the William Hood Durwoody Industrial Institute without fees other than those paid to the University, except a deposit of \$1. All shop and drawing courses should be taken under special advice and may be either extensive or intensive in resultant preparation for teaching. Degree candidates, especially those transferring from other institutions should bear in mind the maximum of forty-five quarter credits, of shopwork and drawing combined, which is enforced in this department. Twenty credits of shopwork and ten credits of drawing are required. Credits in excess of forty-five will be recorded but will not be counted toward degree requirements. Certain off-campus courses and services will be available. Those interested should consult with members of the Industrial Education staff.

METHODS AND DIRECTED TEACHING

Major adviser.—Assistant Professor Carlson.

Conference for Student Teachers.—The director of Student Teaching will arrange for a series of conferences which are a part of the required work in directed teaching. The hour at which these conferences are held will be announced in the fall.

Statement of fees.—For all courses in special methods, directed teaching, and special methods and directed teaching combined, a fee of \$1 per credit is charged. Passing the qualifying examination is prerequisite to all special methods and student teaching courses. For Clinical Methods and Directed Teaching in Speech Pathology see Ed.C.I. 174-175-176.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.T.52f,w,s†§	Directed Teaching (5 cred.; sr.; prereq. Special Methods Course)	Ar	Ar	Ar	Mr. Carlson
Ed.T.53s†§	Directed Teaching of Subnormal Children (5 cred.; sr.)	Ar	Ar	Ar	Mr. Carlson
Ed.T.68Af-68Bw-68Cs†§	Special Methods Course and Directed Teaching in Secondary School Science (9 cred.; sr.; prereq. consent of instructor)	IX	MW	6aPt	Mr. Johnson, Mr. Peterson
Ed.T.68Amf-68Bmw†§	Methods of Teaching Secondary School Science (4 cred.; sr.; prereq. consent of instructor)	IX	MW	6aPt	Mr. Johnson, Mr. Peterson
Ed.T.70Af-70Bw-70Cs†§	Special Methods and Directed Teaching in German (9 cred.; sr.; prereq. German Comp. 50-51-52, German Conversation 53-54-55)	IX	TTh	114Ed	Miss Will
Ed.T.71Af-71Bw-71Cs†§	Special Methods and Directed Teaching in Latin (9 cred.; jr., sr.; prereq. any two of Latin Courses 51-53 or equiv., 73)	IX	MW	112Ed	Miss Marlowe
Ed.T.72Af-72Bw-72Cs†§	Special Methods and Directed Teaching in Romance Languages (9 cred.; jr., sr.; prereq. French 49, 50-51-52, 53, 54-55 [or 20], 63)	IX	TTh	206Ed	Miss Walker
Ed.T.78Af-78Bw	Methods in Primary Grades (4 cred.; jr., sr.)	I-II	S	Ar	Mr. Archer
Ed.T.81f†	Techniques of Puppetry (3 cred.; jr., sr.; prereq. Ed. 51A)	III-IV	S	Ar	Mrs. Meader

MUSIC EDUCATION

Major advisers.—Professor Scott; Associate Professor Pepinsky; Instructor Mrs. Nohavec.

No.	Title	Hour	Day	Bldg.	Instructor
Mu.Ed.60f-61w-62s†§	Supervision and Teaching (9 cred.; sr.; prereq. Ed. 51A,B,C)	III-IV	S	4Mu	Mrs. Nohavec

For Graduate Students Only

Mu.Ed.220Ew	Survey and Application of Research in Music Education (3 cred.; prereq. Mu.Ed. 101)	Ar	Ar	Ar	Mrs. Nohavec
Mu.Ed.224Es	Seminar and Individual Research Problems in Music Education (3 cred.)	Ar	Ar	Ar	Mrs. Nohavec and others
Mu.Ed.225Ef,w,s	Advanced Applied Music (2 to 4 cred.; prereq., entrance exam.)	Ar	Ar	Ar	Ar

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

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

§ Passing the qualifying examination is prerequisite to registration in this course.

MAJOR ADVISERS

1938-39

Subject	Name of Instructor	Room
Agricultural Education	A. M. Field	207Ad(F)
Art Education	R. S. Hilpert	201J
Commercial Education	W. S. Carlson	103Ed
Curriculum and Instruction	L. J. Brueckner	220Bu
	W. E. Peik	204Bu
	Guy L. Bond	212Bu
	C. W. Boardman	218Bu
Educational Administration	M. G. Neale	224Bu
	W. S. Miller	302Psy
Educational Psychology	T. R. McConnell	214Bu
	P. O. Johnson	216Bu
	C. G. Wrenn	113aPsy
	M. J. Van Wagenen	351Psy
	L. J. Brueckner	220Bu
Elementary Education	Guy L. Bond	212Bu
	Jean H. Alexander	206Bu
History and Philosophy of Education	E. B. Wesley	226Bu
	W. B. McNeal	215HE(F)
	Clara M. Brown	101HE(F)
Home Economics Education	Ella J. Rose	111HE(F)
	Homer J. Smith	222Bu
Industrial Education	Frank K. Walter	107Lib
Library Training	L. J. Brueckner	220Bu
Methods and Directed Teaching	Dora V. Smith	206Bu
	W. S. Carlson	103Ed
	Hazel B. Nohavec	213Mu
Music Education	John E. Anderson	205APt
	Josephine C. Foster	100CWI
Nursery School and Kindergarten Education	Katharine J. Densford	123MeS
Nursery Education	L. F. Keller	204CH
Physical Education for Men	J. Anna Norris	102WGM
Physical Education for Women	W. E. Peik	204Bu
Professional Education of Teachers	Margaret G. Arnstein	121MH
Public Health Nursing	G. W. Anderson	121MH
School Health Work	W. S. Carlson	103Ed
Student Teaching	Guy L. Bond	212Bu
Teachers of Subnormal Children	W. D. Wallis	106WeH
Anthropology	W. J. Luyten	359Ph
Astronomy	F. K. Butters	302Bo
Botany	P. O. Johnson	216Bu
Chemistry	E. A. Heilman	V
Economics	Dora V. Smith	206Bu
English	C. W. Nichols	319F
	D. H. Davis	101Bu
Geography	O. C. Burkhard	210F
German	A. C. Krey	226Bu
History	E. B. Wesley	226Bu
	R. V. Cram	118F
Latin	A. L. Underhill	126F
Mathematics	P. O. Johnson	216Bu
Natural Science	J. W. Buchta	148Ph
Physics	O. P. Field	213Bu
Political Science	G. W. Anderson	121MH
Preventive Medicine and Public Health	R. M. Elliott	112Psy
Psychology	F. B. Barton	228F
Romance Languages	A. A. Stomberg	13F
Scandinavian	E. B. Wesley	226Bu
Social Studies	Clifford Kirkpatrick	111J
Sociology and Social Work	F. M. Rarig	309AF
Speech	Bryng Bryngelson	410F
Speech Pathology	J. E. Wodsedalek	9Z
Zoology		

SPEAKERS

GE. Minnesota Department of Agriculture,
and Food, State Office Building, St. Paul,
sota

RGASEN, Armour and Company, Union
Yards, Chicago, Illinois

RVICK, Gude Brothers, Kieffer Company,
Lea, Minnesota

AKER, Beatrice Creamery Company, 1526
State Street, Chicago, Illinois

BIRD, Department of Dairy Industry, Iowa
College, Ames, Iowa

H. C. Christians Company, Preston, Minn.

WARD, American Stores Produce Com-
1025-1028 New York Building, St. Paul,
sota

MER, Great Atlantic & Pacific Tea Com-
711 West Lake Street, Minneapolis, Minn.

ON, Minnesota Dairy Industry Committee,
sity Farm, St. Paul, Minnesota

speakers are from the University staff.

OTHER DAIRY SHORT COURSES

CREAMERY OPERATORS—January 4 to February 28, 1939

The course is designed for those seeking fundamental knowledge pertaining to milk and the manufacture of butter. Those who attend must have had not less than two years of high school training and one year of practical experience in a dairy plant.

A tuition fee of \$15 is charged. In addition, there will be a hospital fee of \$1. The cost of books, white clothing, etc., will be about \$15. For those who lack the formal educational requirement for entrance, a special entrance examination will be arranged.

ICE CREAM MANUFACTURERS—March 21-24, 1939

The Ice Cream Short Course will interest men in various fields of the dairy industry, including those who are manufacturing ice cream and those who are interested in the manufacture and distribution of creamery equipment. Fee: \$5.

DAIRY FARMERS' DAY—June 2, 1939

This is a day set aside for dairy farmers to visit University Farm and to take part in a program of subjects of special interest to dairy producers. No fee.

*For further information regarding any of these events, write to
Division of Dairy Husbandry, University Farm, St. Paul, Minnesota*

Bulletin of

University of Minnesota—Department of Agriculture

Advanced Creamery Operators' Short Course

November 15-18, 1938

University Farm, St. Paul

Vol. XLI

No. 52

October 15 1938

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PROGRAM

Room 9, Haecker Hall

Tuesday, November 15

- 8:30 Registration
9:30 Welcome - - - - - J. B. Fitch
10:15 Application of the Phosphatase Test to the Butter
Industry - - - - - J. C. Olson
11:15 Obsolete Dairy Laws - - - - - S. L. Hauge
1:30 Observations on Metallic Flavor - - - - - V. L. Turgasen
2:30 Water and Air and Their Relation to Butter Defects - H. Macy
3:30 Location and Construction of Creamery Wells and
Pumps - - - - - O. E. Brownell
4:30 Round Table Discussion - - - - - Leader, O. A. Storvick

Wednesday, November 16

- 9:15 High Temperature Pasteurization Studies
Experimental Equipment - - - - - S. T. Coulter
Body and Texture Observations - - - - - S. T. Coulter
Efficiency of Pasteurization - - - - - W. M. Roberts
Fat Losses in Buttermilk - - - - - W. B. Combs
10:15 New Information on Butter Wrappers - - - - - {H. Macy
J. C. Olson
11:15 Experiments with Anti-oxidants in Butter - - - - - {S. T. Coulter
W. B. Combs
1:30 Notes on the Quality Maintenance of Creamery
Butter - - - - - M. E. Parker
2:30 Modern Ideas on Refrigeration - - - - - A. Hustrulid
3:30 Methods of Testing Buttermilk - - - - - E. W. Bird
4:30 Round Table Discussion - - - - - Leader, O. Ause

Thursday, November 17

- 9:15 Installation of Creamery Waste Treatment Plants - H. G. Rogers
10:15 New Developments in Feeding Dairy Cattle - - - J. B. Fitch
11:15 So-called "Musty Flavor" - - - - - H. Macy
1:30 What Do You Mean by pH? - - - - - S. T. Coulter
2:30 Effect of Variable Cream Acidities at the Time of Churning
on the Manufacture of Butter - - - - - E. W. Bird
3:30 Present Status of the Vitamin Question - - - - - L. S. Palmer
4:30 Round Table Discussion - - - - - Leader, R. W. Howard

Friday, November 18

- 9:15 Studies on Rollerless Churns
Body and Texture - - - - - S. T. Coulter
Composition - - - - - S. T. Coulter
Fat Losses - - - - - W. B. Combs
10:15 Observations on Leaky Butter - - - - - {S. T. Coulter
W. B. Combs
11:15 Recent Work on Methods of Sterilization of Interest
to the Dairy Industry - - - - - H. Macy
1:30 Business Analysis of Some of Minnesota's More
Successful Creameries - - - - - E. F. Koller
2:30 Progress of the Dairy Advertising Program - - - - - W. H. Olson

The Bulletin *of the University of* **Minnesota**

*Instructions for Registration of New
Freshmen and Advanced Standing
Students*

Winter Quarter, 1938-39
Tuesday - Wednesday, January 3-4, 1939



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REGISTRATION INSTRUCTIONS

NEW FRESHMEN AND ADVANCED STANDING STUDENTS

WINTER QUARTER, 1938-39

Tuesday-Wednesday, January 3-4, 1939

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues for registration material.

Freshmen present admission certificate, English assignment card, and physical examination appointment.

Advanced standing students present admission certificate, record of advanced standing, aptitude test card, and physical examination appointment.

You will receive a Combined Class Schedule. Freshmen, sophomores, and un-classed students will receive registration blanks. Juniors and seniors will receive registration blanks when they report for registration.

3. Report for registration:

Freshmen and Sophomores, 113 Folwell Hall.

Juniors and Seniors, 219 Folwell Hall.

Unclassed, 219 Administration Building.

4. Report to 106 Folwell Hall to have your registration blank tallied.
5. Report to a fee statement table in the University Armory to turn in your registration blank. You will be required to present your admission certificate and will receive a statement of winter quarter fees.
6. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Wednesday, January 4. Fees may be paid by mail and should be post-marked on or before January 4 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minn.
7. Report to classes Thursday, January 5. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted in the basement of the Administration Building, about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

COLLEGE OF EDUCATION:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.

2. Report to the University Armory, 17th and University Avenues for registration material.

Freshmen present admission certificate. English assignment card, and physical examination appointment.

Advanced standing students present admission certificate, record of advanced standing, and physical examination appointment.

You will receive a registration blank for winter and spring quarters, a Combined Class Schedule, and memorandum of year's registration. Advanced standing students who wish to register for directed teaching winter or spring quarter should request a directed teaching card and instructions.

3. For special help or advice either before or after arrival, consult Miss Dora V. Smith, chairman of the New Students' Committee of the College of Education, Room 206, Burton Hall.
4. Report to your major adviser for registration. Department major advisers' names and offices are listed on your major program blank and memorandum of year's registration, which you have in triplicate. All requirements for the last two years' work must be listed in appropriate columns and signed by a different major adviser in each of the three fields: your major, your minor, and education. Your registration blank and all copies of your year's program will then be signed by the adviser in your major field. After you have had your courses for the winter quarter tallied, turn in your white major program blank to Room 202 Burton Hall, your blue one to your major adviser, and keep the yellow one for reference. Your registration blank should be turned in at the fee statement table in the Armory.
5. Report to 204 Burton Hall. Make an appointment to take the educational psychological examination required of all students entering the College of Education before registration is accepted.
6. Report to tally desk, 106 Folwell Hall (unless registration blank was stamped tallied at checking desk.)
7. Report to fee statement table in the University Armory to turn in your registration blank. You will be asked to present your admission certificate and will receive a statement of winter quarter fees.
8. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Wednesday, January 4. Fees may be paid by mail and should be post-marked on or before January 4 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minn.
9. Report to classes Thursday, January 5. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted in the basement of the Administration Building about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.
A passing grade in qualifying examinations is required of all students as a prerequisite to the work in the senior year in the College of Education. All registrations in directed teaching, or courses involving directed teaching or faculty

supervision, are tentative and subject to cancellation for all students who have not received a passing mark in all four of these examinations. Watch Official Bulletin, *Minnesota Daily*, for announcement of time and place of examinations.

COLLEGE OF PHARMACY:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues to obtain statement of fees.
Freshmen present admission certificate, English assignment card, and physical examination appointment.
Advanced standing students present admission certificate, record of advanced standing, and physical examination appointment.
3. Report to Bursar's Office, Administration Building, and pay fees.
4. Report to 101 Pharmacy Building for registration. You will be asked to present your paid fee receipt before registering. Registration and payment of fees should be completed before 4:30 p.m. Wednesday, January 4, to avoid late fees.
5. Report to classes Thursday, January 5.

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to 203D Administration Building, University Farm, for registration.
Freshmen present admission certificate, aptitude and English placement test cards,* and physical examination appointment. English theme not required.
Advanced standing students present admission certificate, record of advanced standing, aptitude test card, and physical examination appointment.
3. Report for assignment to adviser:
Agriculture—Room 200, Plant Pathology Building, University Farm.
Forestry—Room 110, Green Hall, University Farm.
Home Economics—Room 215, Home Economics Building, University Farm.
4. Report to adviser for approval of registration blank.
5. Turn in approved registration blank at Registrar's Office, Room 203d, Administration Building, University Farm to receive statement of fees.
6. Pay fees at Cashier's Office, University Farm, before 4:30 p.m., Wednesday, January 4, to avoid late fees.
7. Report to classes Thursday, January 5.

GENERAL COLLEGE:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.

* Test card not required if Admission Certificate shows tests to have been taken.

2. Report to the University Armory, 17th and University Avenues to obtain registration material.
Freshmen present admission certificate, aptitude test card,* and physical examination appointment.
Advanced standing students present admission certificate and physical examination appointment.
3. Report to 200 Wesbrook Hall for registration. Your registration blank must be approved by an adviser.
4. Report to one of the fee statement tables in the Armory to turn in your registration blank and receive a statement of your winter quarter fees. When you turn in your registration blank, you will be asked to present your admission certificate.
5. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Wednesday, January 4. Fees may be paid by mail and should be postmarked on or before January 4 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minn.
6. Report to classes Thursday, January 5. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted in the basement of the Administration Building about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

SCHOOL FOR DENTAL HYGIENISTS:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues to obtain statement of fees.
Freshmen present admission certificate, aptitude test card,* and physical examination appointment.
Advanced standing students present admission certificate, record of advanced standing, and physical examination appointment.
3. Report to Bursar's Office, Administration Building, and pay fees.
4. Report to 106 Medical Sciences Building for registration. You will be asked to present your paid fee receipt before registering. Registration and payment of fees should be completed before 4:30 p.m. Wednesday, January 4, to avoid late fees.

SCHOOL OF NURSING:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues to obtain statement of fees.

* Test card not required if Admission Certificate shows tests to have been taken.

Freshmen (entering from high school) present admission certificate, aptitude test cards,* and physical examination appointment and receive statement of fees.

Advanced standing students (five-year and graduate nurses) present admission certificate, record of advanced standing, aptitude test card,* and physical examination appointment and receive statement of fees.

Postgraduate students in nursing present admission certificate, aptitude test card,* and physical examination appointment. Postgraduate students will receive a fee statement for the \$5 deposit required (exempt from tuition and incidental fee if in service).

3. Report to Bursar's Office, Administration Building and pay fees.
4. Report to 125 Medical Sciences Building for registration.
5. Report to classes Thursday, January 5.

INSTITUTE OF TECHNOLOGY:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues to obtain statement of fees.

Freshmen present admission certificate, English assignment card, and physical examination appointment.

Advanced standing students present admission certificate, record of advanced standing, and physical examination appointment.

3. Report to 206 Main Engineering Building for identification photograph. Obtain receipt.
4. Report for registration. Present fee statement and receipt for photograph.

Architecture	318 Main Engineering Building
Engineering Curricula.....	101 Main Engineering Building
Chem., Chem. Eng., Physics.....	Library, Chemistry Building
Mines and Metallurgy.....	103 Mines Building

5. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Wednesday, January 4. Fees may be paid by mail and should be post-marked on or before January 4 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minn.
6. Report to classes Thursday, January 5. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted in the basement of the Administration Building about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

* Test card not required if Admission Certificate shows tests to have been taken.

LAW, DENTISTRY, BUSINESS ADMINISTRATION (Advanced standing students only):

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues to obtain statement of fees. Present admission certificate, record of advanced standing, and physical examination appointment.
3. Report to Bursar's Office, Administration Building, to pay fees.
4. Report to college office and complete registration by 4:30 p.m. Wednesday, January 4:

Law School.....	214 Law Building
School of Dentistry.....	149 Medical Sciences Building
School of Business Administration.....	127 Vincent Hall

MEDICAL SCHOOL, MEDICAL TECHNOLOGY (Advanced standing students only):

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues to obtain registration material. Present admission certificate, record of advanced standing, and physical examination appointment.
3. Report to 136 Medical Sciences Building for registration.
4. Report to a fee statement table in the University Armory to turn in your registration blank and obtain statement of fees.
5. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Wednesday, January 4. Fees may be paid by mail and should be post-marked on or before January 4 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minn.
6. Report to classes Thursday, January 5. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted in the basement of the Administration Building about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

UNIVERSITY COLLEGE:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues to obtain registration material. Present admission certificate, record of advanced standing, and physical examination appointment.
3. Report to 143 Physics Building for registration.

4. Report to tally desk, 106 Folwell Hall.
5. Report to Window 19, Registrar's Office for fee statement.
6. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Wednesday, January 4. Fees may be paid by mail and should be post-marked on or before January 4 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minn.
7. Report to classes Thursday, January 5. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted in the basement of the Administration Building about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

PUBLIC HEALTH NURSING:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for physical examination.
2. Report to the University Armory, 17th and University Avenues to obtain registration material. Present admission certificate, record of advanced standing, and physical examination appointment slip.
3. Report to 121 Millard Hall for registration.
4. Report to a fee statement table in the University Armory to turn in your registration blank and obtain statement of fees.
5. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Wednesday, January 4. Fees may be paid by mail and should be post-marked on or before January 4 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minn.
6. Report to classes Thursday, January 5. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted in the basement of the Administration Building about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

READ THE FOLLOWING ITEMS CAREFULLY—THEY MAY SAVE YOU UNNECESSARY DELAY AND INCONVENIENCE.

- a. You are strongly advised to take the required tests and obtain your admission certificate before coming to the University.
If you have not written the tests, arrange to come to the University before the registration period begins, if possible, to write these tests. Appointments for the tests may be made at 310 Northrop Memorial Auditorium at any time.
- b. If you have lost your admission certificate a duplicate may be obtained at Windows 18-20, Registrar's Office, first floor, Administration Building.
- c. If you have **not** received an admission certificate, and have had your credits forwarded from the last school attended, report to the Board of Admissions,

Windows 18-20, Registrar's Office, first floor, Administration Building, for an admission certificate.

- d. To obtain English assignment card, freshmen in Science, Literature, and the Arts, Education, and Pharmacy must have written the college aptitude test, English placement test, and English theme. Freshmen in the Institute of Technology may obtain English assignment card by writing only the English placement test and English theme.
- e. If you need to write the college aptitude test, English placement test, and English theme (either the first two tests or all three) make appointment at 310 Northrop Auditorium to take these tests, preferably during the fall. If it is not convenient to report earlier these tests may be taken Tuesday, January 3 at 9:00 a.m. in Room 133 Physics Building.
If you have taken the college aptitude test and need only to write the English theme make appointment to write the theme at 310 Northrop Auditorium during the fall. If it is not convenient to report earlier the theme may be written at 166 Physics Building at 9:00, 10:00, or 11:00 a.m. Tuesday, January 3.
- f. If these tests are not written before coming to the University, some delay must be expected due to the time necessary for scoring the tests, reading the theme, and classifying you for your English course. As soon as you have completed the tests, you may receive your admission certificate, but BEFORE you report to the Armory and **not less than 36 hours** after the theme has been written, you must report to 219 Folwell Hall for your English classification.
- g. If you received an English classification card by mail and need a duplicate, report to Room 219 Folwell Hall.
- h. If you wish special advice before proceeding with your registration, members of the faculty will be available for consultation in the University Armory, and the Committee on Vocational Counseling will be available in Room 310 Northrop Auditorium.

PLEASE NOTE ESPECIALLY

Do not report to the Armory without the credentials referred to in the instructions.

Do not report to the Registrar's Office for an admission certificate until after you have written the tests (if required) and at least 12 hours have elapsed to permit their being scored.

Do not report for your program for the winter quarter without your card for assignment in English.

Do not report for your assignment in English until you have written the college aptitude test, the English placement test, and the English theme, and at least 36 hours have elapsed to permit the English classification to be made.

DURING REGISTRATION DAYS BULLETINS AND GENERAL INFORMATION MAY BE OBTAINED AT THE TICKET BOOTH, EAST ENTRANCE (17th AVENUE) ADMINISTRATION BUILDING.

If your credentials are not on file in the Registrar's Office, immediate arrangements (by telephone or telegraph) should be made to have credits and honorable dismissal forwarded.

R. M. WEST, Registrar

The Bulletin *of the University of* **Minnesota**

The Graduate School
Announcement of Graduate Work in
Dentistry, Medicine, Pharmaceutical
Chemistry, and Public Health in
the Medical School and the
Mayo Foundation
1938-1939



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UNIVERSITY CALENDAR

1938-39

1938

September	26-October	10	Registration of graduate students
September	26	Monday	Fall quarter classes begin, 8:30 ¹ a.m.
October	6	Thursday	Examinations in German and French for candidates for advanced degrees
November	3	Thursday	Last day for filing theses of candidates for the Ph.D. degree for the fall quarter
November	17	Thursday	Last day for filing theses of candidates for Master's degrees for the fall quarter
November	19	Saturday	Last day for filing subject title of Master's theses for the spring quarter
December	15	Thursday	Commencement Convocation
December	17	Saturday	Fall quarter ends, 6:00 p.m.

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January	5	Thursday	Winter quarter classes begin, 8:30 ¹ a.m.
January	12	Thursday	Examinations in German and French for candidates for advanced degrees
February	9	Thursday	Last day for filing theses of candidates for the Ph.D. degree for the fall quarter
February	23	Thursday	Last day for filing theses of candidates for Master's degrees for the winter quarter
March	23	Thursday	Commencement Convocation
March	25	Saturday	Winter quarter ends, 6:00 p.m.
April	3	Monday	Spring quarter classes begin, 8:30 ¹ a.m.
April	13	Thursday	Examinations in German and French for candidates for advanced degrees
May	6	Saturday	Last day for filing theses of candidates for the Ph.D. degree in June
May	20	Saturday	Last day for filing theses of candidates for Master's degree in June
June	16	Friday	Spring quarter closes, 6:00 p.m.
June	17	Saturday	Sixty-seventh annual commencement
June	21	Wednesday	First term Summer Session classes begin, 8:00 a.m.
July	1	Saturday	Last day for filing theses of candidates for advanced degrees for first term of Summer Session
July	27	Thursday	Commencement Convocation
July	28	Friday	First term closes
July	31	Monday	Second term classes begin, 8:00 a.m.
September	1	Friday	Second term closes

¹ First hour classes begin at 8:15 at University Farm.

GRADUATE WORK IN MEDICINE

ORGANIZATION

The graduate work in dentistry, medicine, pharmaceutical chemistry, and public health in the Medical School and the Mayo Foundation is a part of the work of the Graduate School of the University. Its management is entrusted by the Board of Regents to a committee composed as follows :

The President of the University, Guy Stanton Ford, Ph.D., LL.D., Litt.D.

The Dean of the Graduate School

The Dean of the Medical Sciences, Harold S. Diehl, M.A., M.D., D.Sc.

The Director Emeritus of the Mayo Foundation, Louis B. Wilson, M.D.

The Director of the Mayo Foundation, Donald C. Balfour, M.D.

Clarence M. Jackson, M.D., M.S., LL.D., of the Medical School

Elexious T. Bell, M.D., of the Medical School

Irvine McQuarrie, M.D., Ph.D., of the Medical School

Owen H. Wangensteen, M.D., Ph.D., of the Medical School

William F. Braasch, M.D., of the Mayo Foundation

Melvin S. Henderson, M.D., of the Mayo Foundation

Russell M. Wilder, M.D., Ph.D., of the Mayo Foundation

Arlie R. Barnes, M.D., M.S. in Med., of the Mayo Foundation

Frank C. Mann, M.D., M.S., of the Mayo Foundation

GENERAL INFORMATION

The graduate work in medicine here outlined is not intended for those seeking brief practitioners' or review or demonstration courses. Opportunities of this kind are to be found in the Bulletin of the Center for Continuation Study, and in special announcements from the Mayo Foundation.

Purpose.—The object of this graduate work in medicine is the training of fully equipped and properly certified specialists for medical practice and of investigators and teachers in the various branches of medicine.

Standards.—In graduate work in medicine the University of Minnesota, in order to secure results and safeguard scientific standards, adopted those general policies and methods already indicated by the established graduate work in other sciences. The development has depended upon the maintenance of real standards of admission; the supply of qualified advisers to graduate students; the provision of adequate laboratory, clinical, and library equipment; and the institution of rigid tests in course and examinations in residence, with evidence of the power of productive research on the part of the graduate student as demonstrated in a thesis.

In clinical branches the degree of master of science is intended primarily to indicate scientific proficiency. To be recommended for this degree the candidate must have given evidence by three years of residence that he is competent to begin the practice of a clinical specialty in a scientific manner without the supervision of others. The doctorate of philosophy in clinical subjects will be given only to those men who have not only given evidence of proficiency at least equal to that required for the Master's degree, but who in addition present evidence of well-marked ability to advance medical science through original investigation.

Laboratory equipment.—The laboratory equipment for the prosecution of graduate work in medicine is located in Minneapolis, St. Paul, and Rochester. The laboratory branches are well housed in excellently equipped buildings on the campus at Minneapolis and at Rochester. The university museums of anatomy, pathology, and surgery contain a large number of specimens available for teaching purposes.

Clinical equipment.—The University owns and controls Elliot Memorial Hospital with its service building, the Memorial Cancer Institute, the Todd Memorial Hospital, the William Henry Eustis Hospital for Crippled Children, and the Students' Health Service.

The State Hospital for the Crippled and Deformed at Phalen Park, St. Paul, offers the University full participation in its clinical opportunities. The city hospitals of Minneapolis and the Ancker Hospital of St. Paul are available for graduate work.

In Rochester, St. Mary's, Colonial, Kahler, Worrall, and Curie hospitals are available. All patients are examined clinically in the Mayo Clinic Building.

Services are arranged so that a fellow may find time in addition to his clinical responsibilities to carry forward consistently some research problem.

Seminars and conferences in the several special groups, such as the general group seminars, clinical-pathological conferences and Research Club, and others, are conducted to afford opportunities for fellows to present interesting clinical and research material, correlating knowledge of the various phases of the subject. While this may be purely clinical, in most instances it will be found to have relationships requiring detailed study in physiology, physiological chemistry, pathology, or bacteriology.

The working museum contains more than 500,000 pathological specimens.

Arrangements have been made whereby fellows or other graduate students in medicine may divide their time, part of their work being taken in the Mayo Foundation at Rochester and part in the Medical School at Minneapolis and St. Paul.

Libraries.—Besides the University Library and the departmental libraries, there are at the disposal of the student the general medical and biological libraries in the University Library, and the collections of the Hennepin County and Ramsey County Medical Societies. The medical library of the Mayo Foundation occupies one floor of the clinic building with ample provision for a general reading room and private rooms for special studies. Current issues and complete files of the most important medical periodicals are available in both Minneapolis and Rochester.

Methods of study.—Graduate work in medicine is maintained on a university basis. The graduate student is encouraged to study independently rather than to receive formal instruction by undergraduate methods. The student's work is graded quarterly by his immediate chief. Work which receives a grade below B will not be counted for graduate credit in the major field, nor if below C, in the minor. Students with unsatisfactory records will not be permitted to continue.

Registration and number of students.—All graduate students entering upon graduate work in medicine will register with the dean of the Graduate School. Fellows who begin their residence in Rochester may fulfill the preliminary requirements by registering there with the director of the Mayo Foundation. The number of graduate students who will be registered for work is determined by the clinical opportunities and laboratory facilities available.

Tuition.—The tuition fee at the Medical School for the graduate work in clinical medicine for those not holders of fellowships or otherwise entitled to exemption is \$75 per quarter for residents of Minnesota and \$125 per quarter for nonresidents. For students in the fundamental laboratory branches, the tuition fee is \$20 per quarter for residents of Minnesota and \$40 per quarter for nonresidents. Extra fees may be charged to cover the cost of materials and supplies for exceptional laboratory experimentation. The special fees for graduate work in the Summer Session are stated in the separate Summer Session Bulletin. Fellows, scholars, and members of the teaching or scientific staff giving 25 per cent or more of full-time service are exempt from tuition.

Fellowships, assistantships, and scholarships.—Medical fellowships in the clinical departments of the Medical School are now established as fol-

lows: in surgery, 8; in internal medicine (including mental and nervous diseases), 7; in obstetrics, 5; in ophthalmology and otolaryngology, 4; in radiology, 2; and in pediatrics, 4. In addition, there are several clinical fellowships in the Minneapolis General Hospital. They include 4 in medicine, 5 in surgery, 3 in ophthalmology and otolaryngology, and 1 in pediatrics. They carry a stipend of \$600, \$600, and \$900, for the three successive years. These medical fellows are required to devote their entire time (excepting an annual vacation of three weeks) to graduate work, including a small amount of teaching. There are also 3 research fellowships available in the Cancer Institute at the University Hospital.

Similar medical fellowships and assistantships have been established in the fundamental laboratory departments of the Medical School as follows: in anatomy (including histology and embryology), 7; in physiology and physiological chemistry, 8; and in bacteriology, 6. These fellowships and assistantships carry a stipend of \$800 per year on a twelve-month basis. There are 4 fellowships in pathology which carry a stipend of \$700 the first year, \$900 the second, and \$1,100 the third year. In some cases the assistantships are for the school year only (September to June), with proportionately smaller stipend. They require a small amount of teaching, the remainder of the time being devoted to graduate work leading to advanced degrees.

In addition, there are at Minneapolis 5 scholarships without stipend, carrying free tuition with opportunity for graduate study in any of the clinical departments.

The attention of prospective medical graduate students is also called to the Shevlin Fellowship in Medicine yielding \$500 and tuition. This fellowship permits work in any department of medicine, preference being given to the laboratory sciences. Applications should be in the hands of the dean of the Graduate School before March 1.

The Mayo Foundation carries the following basic and clinical fellowships: in clinical and experimental surgery, 100; in neurologic surgery, 6; in orthopedic surgery, 10; in ophthalmology, 8; in rhinology and otolaryngology, 8; in obstetrics and gynecology, 8; in plastic surgery, 3; in proctology, 4; in urology, 12; in anesthesia, 10; in clinical and experimental medicine, 80; in dermatology, 7; in neurology and psychiatry, 11; in pediatrics, 11; in physical medicine, 3; in radiology, 11; in pathology, 15; in bacteriology, 3; in physiology, 2; in parasitology, 2; in chemistry, 2; in biophysics, 2; and in nutrition, 2. The fellowships carry stipends of \$900 each year.

Nominations for fellowships on the Mayo Foundation are made each quarter, beginning with October 1, for residence to begin six months later or as vacancies occur. Each applicant is notified of his nomination immediately after it is made and his acceptance or rejection thereof requested. In the Medical School appointments are made as vacancies occur.

All appointments are made for one year and are renewable annually for a period of three years upon the basis of satisfactory progress in the work pursued. Requests for blanks for application for fellowships, assistantships, and scholarships should be addressed to the Dean of the Graduate School, University of Minnesota, Minneapolis, Minnesota, or to the Director of the Mayo Foundation, Rochester, Minnesota.

Special assignments.—Special students, such as traveling fellows from other universities or foundations, officers of the medical corps of the United States Army, Navy, or Public Health Service, and others, may be accepted at Rochester in laboratory and clinical branches for short periods. The number is necessarily limited in order not to interfere with the work of the resident fellows. Correspondence concerning this should be addressed to the director of the Mayo Foundation, Rochester, Minnesota.

Fellows who have satisfactorily completed three years of residence in the Mayo Foundation may be awarded assistantships in the Mayo Clinic.

Several of the departments in the Medical School (including Anatomy, Physiology, and Pathology) have other paid assistantships which may furnish means of self-support while the holder is pursuing graduate work. For further information, address the dean of the Medical School.

Clinical and class work for visiting or resident practitioners.—In order that there may be no misunderstanding it should be stated that the graduate work for a limited number, described above, in no way alters the arrangements offered in Minneapolis by the Medical School for practitioners who wish to attend such undergraduate medical classes as may be of profit to them without interfering with the regular work of the staff and students of the Medical School. Class visitors are charged the same fees as students regularly registered for credit. Inquiries concerning these opportunities should be addressed to the Dean of the Medical School, 127 Medical Sciences Building, Minneapolis, Minnesota.

Nor, do the fellowships in the Mayo Foundation change or modify the opportunities for observation extended visiting physicians and surgeons by the Mayo Clinic in Rochester. Inquiries concerning these should be addressed to the Director of the Mayo Foundation, Rochester, Minnesota.

Summary of requirements.—The various steps involved in the requirements for the degree of doctor of philosophy (Ph.D.) in any one of the clinical or laboratory departments are briefly summarized on page 12.

The requirements for the Master's degree (M.A. or M.S.) are indicated on page 11. Further information concerning graduate work in general may be found in the Graduate School Bulletin.

Requirements for advanced degrees in medicine.—1. Selection. In the selection of graduate medical students, and in making appointments to fellowships for medical graduate work, preference will be given, other things being equal, to candidates who have more extensive training in the fundamental medical sciences (i.e., anatomy, physiology, pathology, etc.) through which they should make their approach to the specialty which they wish to take as a major subject. Personal interviews with applicants are desirable.

2. Admission. All graduate students are admitted by the dean of the Graduate School. Entrance upon work for the advanced degrees of master of science (M.S.) or doctor of philosophy (Ph.D.) in the clinical departments of medicine is limited to those who have: (a) the Bachelor's degree in arts or science or its equivalent;* (b) the degree of doctor of medicine

* Students who have completed at least two years of premedical collegiate work, making an equivalent of the seven years combined Arts-Medicine Course at the University of Minnesota, may be eligible for admission as graduate students.

from acceptable institutions (i.e., those approved by the American Medical Association); and (c) one year's experience as an intern in an approved hospital or as an assistant in a laboratory in an acceptable medical school. In the fundamental laboratory sciences (anatomy, biophysics, biochemistry, physiology, bacteriology, pathology, and pharmacology) properly prepared students may be admitted without (b) and (c) as candidates for the Master's degree (M.A. or M.S.) or the Doctor's degree (Ph.D.)

Applicants to be considered for fellowships are expected to read and speak English fluently. Fellows must pass a satisfactory physical examination including X ray of the chest after nomination and before being finally accepted.

3. Licensure. Graduate students working in any field of clinical medicine must be licensed to practice in Minnesota within six months after beginning their work in either the Medical School or the Mayo Foundation.

4. Residence. Upon entrance to the Graduate School, the candidate, with the approval of the dean, will select his adviser in the field of his major work. With the approval of his adviser and the dean, he will outline a study program for the year and if possible for the period of residence.

For the Doctor's degree (Ph.D.) at least three full years of successful graduate study are required, including certain special requirements noted below. For the Master's degree (M.S.) in clinical subjects, two or three years are required. For the Master's degree in the laboratory sciences a minimum of one year (three quarters) of residence is required. For the Master's degree *with field named* (M.S. in Path. or Rad.) in pathology or radiology, three years are required.

5. Language requirements. A reading knowledge of French and German in the field of the candidate's major must be certified by the professors in charge of these languages at least one year before the Doctor's degree is conferred, and before admission to the preliminary examination. For the Master's degree in the laboratory sciences, a reading knowledge of only one foreign language is required, which must be certified before the end of the second quarter of the year in which the candidate expects to present himself for the degree. For the Master's degree (M.S.) in the clinical branches, the language certificate is optional.

6. Study program. The study program for the entire three years should be submitted at the beginning of the first year and must be submitted before beginning the second year. This program requires approval by the student's adviser, by the dean, and by the Medical Group Committee. Sufficient research work to train the fellow properly in the principles and methods of scientific investigation and to form the basis of an acceptable thesis is required.

7. Minor. With the approval of his adviser and the dean of the Graduate School, each student upon entrance selects a minor, which must be logically related to his major subject, and (for the Doctor's degree) must be completed by the end of the second year. The minor is preferably a laboratory subject in some other department, and should amount to not less than one sixth of the total work for the degree. *At least one sixth* of the work offered for the degree in a clinical subject should consist of graduate work

in those fundamental laboratory branches, which will serve as a basis for the proposed clinical specialization. This fundamental work should be concentrated in the first part of the course so far as possible. The final examination in the minor for the Doctor's degree is included in the preliminary examination, as noted below. For the Master's degree no special examination is required in the minor, aside from the usual course examinations.

Familiarity with those phases of the medical sciences essential to proficiency in the major specialty will be required.

8. Major. The major is that field in which the student desires to specialize. Together with the thesis, the major work should occupy *at least two thirds* of the total work for the degree.

9. Certificate of proficiency. Each candidate must have a certificate of proficiency signed by all members of the faculty with whom he has served, stating that in their opinion he is competent to begin the practice of his major field in a scientific manner without the supervision of others.

10. Admission to candidacy. For the Master's degree without major designation, students who have met the language requirement, whose daily work in residence as indicated by quarterly grades has been satisfactory, and whose thesis subject has been properly approved, are admitted to candidacy at the end of the second quarter. For the Doctor's degree, the student is required to pass a preliminary examination, as noted below, before admission to candidacy.

11. Preliminary examination. At least seven months before the Doctor's degree is conferred, an oral preliminary examination of the student is given by a committee appointed by the dean, which shall not exceed three hours. Certificates of proficiency in French and German, completion of the minor work, and the recommendation of the major department shall be required before admission to this examination. The examination is in addition to the usual course examinations. It shall cover the graduate work previously taken by the student, *and may include any work fundamental thereto. The field of the candidate's specialization and the thesis are reserved for the final examination.* Only after the successful completion of this examination may the student be enrolled as a candidate for the Doctor's degree. Students failing to pass this preliminary examination shall not be re-examined until at least one quarter has passed.

12. Thesis. Each candidate for an advanced degree (Master's or Doctor's) must submit a thesis. For the Master's degree the subject of the thesis should be filed with the dean of the Graduate School six months prior to candidacy. The subject must be approved by the adviser and by the Medical Graduate Committee. The topic should be within the field of the major, and the thesis should represent approximately half of a year's work by the student. The thesis must be written in acceptable English. It must show ability to work independently and give evidence of power of independent thought both in perceiving problems and in making satisfactory progress toward their solution. Familiarity with the bibliography of the special field and correct citation of authorities are expected.

The Master's thesis must be typewritten in quadruplicate, two copies on a special form of linen stock, the other two as carbon copies. Samples

of the paper required should be examined in the dean's office. The four copies of the thesis must be filed in the dean's office not later than four weeks before graduation. The thesis will be examined by a committee appointed by the dean on recommendation of the Medical Graduate Committee. Unanimous approval by the thesis committee is necessary for the acceptance of the thesis. If the thesis is accepted, the candidate must deposit with the registrar, at least one week before commencement, the sum of \$1.50 for binding two copies of the thesis, which will be cataloged and deposited in the University Library.

For the Doctor's degree, a more elaborate thesis is required. The subject is to be stated in the written department recommendation, which precedes the preliminary examination at the end of the second year. The accumulation of material for the thesis should be started much earlier. The thesis must give evidence of originality and power of independent investigation. It must embody results of research forming a real contribution to knowledge and must exhibit a mastery of the literature of the subject and a familiarity with the sources of knowledge. The matter must be presented with a fair degree of literary skill.

The thesis must be typewritten in quadruplicate, to facilitate reading by the thesis committee. The four copies must be filed in the dean's office not later than six weeks before graduation. The dean will appoint a thesis committee with the student's adviser as chairman. Unanimous approval by this committee will be necessary for the acceptance of the thesis. The candidate must submit with his completed thesis a summary of about ten pages, acceptable to his adviser, embodying the principal findings of the research, and pay to the Graduate School the sum of \$25. Such summaries will be published in appropriate volumes. If the thesis is published before the summary the fee will be returned. A copy of these regulations will be furnished on request. One carbon copy is to be bound in black cover for permanent filing in the Graduate School office.

13. Final written examination. In addition to the usual course examinations in all subjects where such are given, the candidate for the Master's degree must pass a final written examination in the field of the major. (No *special* final examination is required in the *minor*.) The final written examination will be held not later than two weeks before commencement. It is given by the members of the graduate faculty in the major department, the adviser acting as chairman. This examination shall cover all the work done in the major, and may include any work fundamental thereto.

For the Doctor's degree, a final written examination in the major subject is similarly given after the thesis is presented and at least two weeks before commencement.

14. Final oral examination. If all other requirements for the degree have been met, including the final written examination and the acceptance of the thesis, the final oral examination will be held not less than two weeks before commencement. All final examinations for the higher degrees in medicine will include questions on the history of medicine with special reference to the candidate's major field.

For the Master's degree the final oral examination will cover the work

offered for the degree, and may include other work fundamental thereto, and shall not exceed two hours. At the close of the examination, the committee will vote upon the candidate, taking into account all of his work. A majority vote is required for approval.

For the Doctor's degree the final oral examination shall cover the special field of knowledge represented by the major work, including the thesis problem, and shall not exceed three hours. Upon completion of the examination, a formal vote of the committee shall be taken and an affirmative vote of at least two thirds of the members shall be necessary for recommendation of the candidate for the degree.

15. Recommendation by the faculty. The dean will report to the graduate faculty the names of those who have completed the requirements for the Master's and Doctor's degrees, and those duly approved will be recommended by the faculty to the Board of Regents of the University. Unless excused by the dean of the Graduate School and the president of the University, all candidates are required to be present at commencement when the degrees are conferred.

A tabular summary of requirements for the Master's degree follows:

WORK	UNDER THE DIRECTION OF	DATE
Program, major and minor	Adviser and dean of the Graduate School or director of Mayo Foundation	On entrance
Approval of thesis subject	Adviser and group committee	Not less than seven months before graduation
Language requirement	Adviser and language department	Before close of second quarter
Licensure	State Board	Six months after beginning graduate work
Filing of thesis.....	Dean of the Graduate School	Four weeks before graduation
Examination of thesis.....	Thesis committee	Before admission to final oral examination
Final written examination in major	Major department members of the graduate faculty....	Not later than two weeks before commencement and before final oral
Final oral examination on all work	Appointed committee, including the thesis committee	Not later than two weeks before commencement
(Course examinations as required at the usual time.)		
Fee for binding thesis.....	Registrar	One week before commencement

(For the Master's degree in clinical subjects, the dates refer to the last year.)

GRADUATE WORK IN MEDICINE

See tabular summary of requirements for the Doctor's degree below.

WORK	UNDER THE DIRECTION OF	DATE
FIRST YEAR		
Major	Adviser and dean of Graduate School	
Minor		
SECOND YEAR		
Tentative program of entire second and third year's work	Adviser, Medical Graduate Committee, and dean of Graduate School	Before beginning work of second year
Major, including thesis	As for tentative program	
Minor	Adviser and minor department	Before admission to preliminary examination
Language	Adviser and language departments	Before admission to preliminary examination
Recommendation	Major department	
Preliminary examination	Special committee	At least 7 months before degree is to be conferred
THIRD YEAR		
Major, including thesis	Adviser, Medical Graduate Committee, and dean of Graduate School	
Filing of thesis	Dean	Six weeks before graduation
Approval of thesis	Thesis committee	Before admission to final oral examination
Final written examination in major	Major department members of the graduate faculty	Two weeks before commencement and before final oral examination
Final oral examination	Special committee including thesis committee and other members appointed by dean of Graduate School	Not later than two weeks before commencement
Bound copy and 10-page summary of thesis	Graduate School	Not later than one week before commencement

DESCRIPTION OF COURSES AND OPPORTUNITIES

FOR GRADUATE TRAINING IN THE BASIC MEDICAL SCIENCES AND IN CLINICAL SPECIALTIES

It is deemed desirable that the graduate student in medicine be given the greatest possible freedom of choice in his plan of study. Rarely, if ever, have any two graduate students in medical fields in the University of Minnesota selected exactly the same type of work throughout their periods of residence.

The various divisions are grouped under the following departments:

1. Anatomy (including histology and embryology).
2. Bacteriology and Immunology.
3. Biophysics.
4. Biostatics
5. Dentistry.
6. History of Science.
7. Medical Social Work.
8. Medicine (including Divisions of General Medicine, Nutrition, Dermatology and Syphilology, Nervous and Mental Diseases, Neurology and Psychiatry, and Physical Medicine).
9. Obstetrics and Gynecology
10. Ophthalmology, Otology, Rhinology, and Laryngology (including Plastic Surgery).
11. Pathology.
12. Pediatrics.
13. Pharmaceutical Chemistry.
14. Pharmacology and Therapeutics.
15. Physiology and Physiological (Bio) Chemistry.
16. Preventive Medicine and Public Health.
17. Radiology.
18. Surgery (including Divisions of General Surgery, Neurosurgery, Orthopedic Surgery, Urology, Proctology, and Anesthesia).

In most departments the work is described in two separate groups: A—that given in the Medical School, and B—that given in the Mayo Foundation. All courses are numbered for purposes of registration. The courses given in the Mayo Foundation are given the special prefix M. The suffixed f, w, s, and su indicate fall, winter, spring, and summer quarters, respectively. The hyphen denotes courses continuous through the quarters indicated. Suffixed letters separated by commas indicate the repetition of the course in the corresponding quarters. The courses numbered between 100 and 200 are less advanced in character, and in some cases are open as electives to properly qualified undergraduates. The courses numbered above 200 are primarily graduate in character, of the most advanced or research type.

ANATOMY

A. Courses Offered at the Medical School

Professors Clarence M. Jackson, M.S., M.D., LL.D., Head; Edward A. Boyden, Ph.D., Hal Downey, Ph.D., Andrew T. Rasmussen, Ph.D., Richard E. Scammon, Ph.D., LL.D.; Assistant Professor Edith Boyd, B.A., M.D.

The Department of Anatomy offers excellent facilities to students who wish to take advanced work or to pursue investigations in anatomy.

Prerequisites.—The prerequisite work for all students who desire a major or minor in the Department of Anatomy includes general zoology, 9 quarter hours, and advanced zoology or elementary courses in anatomy (including histology, embryology, and neurology), 9 quarter hours. In addition, each student who desires a major in anatomy must have had the elementary courses in that branch of anatomy in which he desires to specialize—gross anatomy, histology, embryology, hematology, or neurology. Students majoring in clinical subjects who desire a minor in anatomy must have had the courses in anatomy usually required of medical students (including Courses 103, 107, and 111). A reading knowledge of either French or German is required of students who desire a major in anatomy for the Master's degree, and a reading knowledge of both French and German is required of those who are candidates for the Doctor's degree.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- 103s,su. Human Histology. Microscopic study of the various tissues and organs. Prerequisite: Anatomy 100-101, or equivalent. 9 credits. Dr. Downey.
- 107s. Human Embryology. Development of the human body. Prerequisite: Anatomy 100-101, or equivalent. 6 credits. Dr. Boyden.
- 111s,su. Human Neurology. A study of the gross and microscopic structure of the central nervous system and sense organs of man. Prerequisites: Anatomy 103 and 107, or Zoology 148-149-150. 6 credits. Dr. Rasmussen.
- 115f,w,s. History of Anatomy. Prerequisite: Anatomy 100-101. 2 credits each quarter. Dr. Miller.
- 120w,s. Experimental Embryology. Prerequisite: Anatomy 107. Hours and credits arranged. Dr. Blount.
- 129f-130w. Topographic Anatomy. Based upon a study of cross sections of the human body. Lectures and laboratory work. Prerequisite: Anatomy 100-101. 2 credits (or more) each quarter. Dr. Jackson.
- 134f,w. Anatomy of the Newborn. A detailed laboratory study of the anatomy of the newborn. Prerequisite: Anatomy 107, or equivalent. 3 credits each quarter. Dr. Boyden.
- 149w. Experimental Neurology. A study of the morphology of the central nervous system by experimental methods. Prerequisite: Anatomy 111. 3 credits (or more). Dr. Rasmussen.

- 150f,w. Seminar in Neurology. Largely conferences upon assigned reading. prerequisite: Anatomy 111. Hours and credits arranged. Dr. Rasmussen.
- 153f-154w-155s-156su. Advanced Anatomy. Individual topics for advanced work in gross anatomy, histology, embryology, hematology, or neurology will be assigned to students who have completed the elementary courses in the corresponding subjects. Special courses are arranged for clinical graduate students. Dr. Jackson, Dr. Boyden, Dr. Downey, Dr. Rasmussen, Dr. Boyd, Dr. Miller, Dr. Blount.
- 157s. Developmental Anatomy of the Head. Prerequisite: Anatomy 107. 3 credits. Dr. Boyden. (Offered in odd numbered years only.)
- 158s. Special Histology and Neurology of the Head Region. Prerequisites: Anatomy 103 and 111. 3 credits. Dr. Rasmussen. (Offered in even numbered years only.)
- 160w. Physical Growth. Lectures on the prenatal and postnatal growth of the external dimensions and organs of the human body. Same as Course 260 in Child Welfare. Prerequisite: Anatomy 107. 2 credits. Dr. Boyd.
- 161f-162w-163s. Statistical Work. Instruction given in methods of analyzing quantitatively the data collected by the student. Same as Course 261f-262w-263s in Child Welfare. Hours and credits arranged. Dr. Boyd.
- 165f-166w. Hematology. Normal and pathologic morphology of the blood and blood-forming organs, with special emphasis on the study of the blood from the standpoint of diagnosis and prognosis. 4 credits each quarter. Dr. Downey.
- 167s. Seminar in Hematology. Discussion of literature and research. Prerequisite: Anatomy 165-166. 1 credit. Dr. Downey.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 201f-202w-203s-204su. Research in Anatomy. Qualified students may undertake the investigation of problems in anatomy, including histology, embryology, and neurology. Special facilities are offered to graduate students in the clinical departments for work upon problems in applied anatomy. Dr. Jackson, Dr. Boyden, Dr. Downey, Dr. Rasmussen, Dr. Scammon, Dr. Blount.
- 205f-206w-207s. Anatomical Seminar. Reviews of the current literature and discussion of research work being carried on in the department. Reading knowledge of French and German desirable. 1 credit. Dr. Jackson.

BACTERIOLOGY AND IMMUNOLOGY

A. Courses Offered at the Medical School

Professors Winford P. Larson, M.D., Head; Robert G. Green, M.D., M.A., Arthur T. Henrici, M.D.; Associate Professor H. Orin Halvorson, Ch.E., Ph.D.; Assistant Professor Charles E. Skinner, Ph.D.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- 102s. Medical Bacteriology. See Bulletin of the Medical School. Prerequisite; Bacteriology 101. 4 credits. Dr. Larson, Dr. Green.

- 103w. Soil Microbiology. Studies of the microscopic inhabitants of the soil. Prerequisites: Bacteriology 41 and 15 credits in chemistry. Dr. Skinner.
- 114s. Molds, Yeasts, and Actinomycetes. Prerequisite: Bacteriology 41 or 101. 4 credits. Dr. Henrici.
- 116w. Immunity. Laws of hemolysis. Quantitative relationship between antigen and antibody. Wasserman reaction. Opsonins. Vaccines. Toxin. Antitoxin. Precipitin reactions. Blood grouping. Atopy. Anaphylaxis. Prerequisite: Bacteriology 102. 3 credits. Dr. Larson.
- 120s. Diseases of Animals Transmissible to Man. Detailed studies of plague, tularemia, undulant fever, typhus fever, spotted fever, and other human diseases obtained from animal reservoirs. Prerequisite: Bacteriology 102. 3 credits. Dr. Green.
- 121f-122w. Physiology of Bacteria. Effect of environment on growth. Enzymes. Food requirements. Carbohydrate, protein, and fat metabolism. Products of growth. Dormancy. Death. Prerequisites: Bacteriology 41 and 8 credits in organic chemistry or biochemistry. 6 credits. Dr. Green, Dr. Halvorson.
- 123s. Applied Bacteriology. Industrial fermentations. Bacteriology of water and sewage. Interpretations of bacteriological data. Prerequisite: Bacteriology 121-122. 3 credits. Dr. Halvorson.
- 124f. Filterable Viruses. Characters of filterable viruses. Nature of virus infections. Transmission of viruses by insects. Important virus diseases of man and animals. Prerequisite: Bacteriology 102. 4 credits. Dr. Green.
- 150f-151w. Advanced Bacteriology. Prerequisites: Bacteriology 102 or 41, 103, 144. 6 credits. Dr. Henrici, Dr. Halvorson.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 201f,w,s. Research in Bacteriology. Graduate students of the necessary preliminary training may elect research, either as majors or minors, in bacteriology. Hours and credits arranged. Dr. Larson, Dr. Green, Dr. Henrici, Dr. Halvorson, Dr. Skinner.
- 203f,w,s. Seminar in Bacteriology. 1 credit. Staff.

B. Courses Offered in the Mayo Foundation

Professors Thomas B. Magath, M.D., Ph.D., Edward C. Rosenow, M.D., Arthur H. Sanford, M.D., M.A.; Assistant Professor Luther Thompson, Ph.D.

Prerequisites.—Opportunities for the graduate study of bacteriology and immunology are in connection with routine clinical examinations and in special research. They are open to graduates in medicine or holders of Master's degrees who have had work both in bacteriology and pathology equivalent to that given in the medical course in the University.

- M251f,w,s,su. Clinical Bacteriology and Parasitology. Making and examination of cultures. Preparation and administration of autogenous vaccines. Wasserman tests; special laboratory methods in clinical bacteriology or

parasitology. Research in bacteriology and parasitology. Dr. Magath, Dr. Sanford, Dr. Thompson.

M252f,w,s,su. Experimental Bacteriology. Research in the bacteriology of normal and diseased tissues, the blood, secretions, and exudates. Experimental inoculation of animals and immunological studies. So far as possible work limited to study of pathogenesis and to development of specific methods of prevention and treatment of various diseases presumably of infective origin. Dr. Rosenow.

In addition to the above, students majoring in bacteriology and immunology may take work in experimental physiology and biochemistry. For details, see these departments.

BIOPHYSICS

A. Courses Offered at the Medical School and in the Department of Physics

Professors Karl W. Stenstrom, Ph.D.; Associate Professors Joseph Valasek, Ph.D., John R. Williams, Ph.D.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

108f‡-110w‡-112s.‡ Modern Experimental Physics. Radioactivity. Dr. Williams.

134f.‡ Experimental Optics.

152f. X Rays. Dr. Valasek.

Other courses listed under Physics may be considered for credit in biophysics.

104. Roentgen and Radium Therapy. (See Radiology 104.)

105f. Roentgen Rays, Light, and Radium. (See Physiology 105.)

106s. Physical Therapy. (See Radiology 106.)

170f,w,s,su. Problems in Biophysics. Investigations of the effects of Roentgen, radium, visible, and ultraviolet radiation may be undertaken. Instruments are available for spectrophotometric work in the visible and ultraviolet regions for temperature measurements by means of thermocouples, and to a certain extent for electrical measurements. Hours and credits arranged. Dr. Stenstrom.

COURSES PRIMARILY FOR GRADUATE STUDENTS

204f,w,s,su. Research in Biophysics. Students who want to carry out more extensive and independent investigations should register for this course instead of for Course 170. Dr. Stenstrom.

B. Courses Offered in the Mayo Foundation

Professor Charles Sheard; Associate Professor Edward J. Baldes.

Graduate work of a research character is offered in biophysics. These researches are concerned chiefly with blood, blood pressure, osmotic pressure,

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

bio-electric phenomena, spectroscopy and spectrophotometry, energy exchanges between the body and its environment.

Prerequisites.—Opportunities for research for theses for the degree of doctor of philosophy are offered to a limited number of qualified fellows majoring in biophysics. In general, the Master's degree or its equivalent is a prerequisite for admission to these advanced research courses. In addition, facilities for experimental work are available to fellows majoring in other departments of surgical, clinical, and experimental work.

Minor.—There are numerous problems suitable for a minor for fellows majoring in other departments of surgical, clinical, and experimental work.

M254f,w,s,su. Special Researches in Biophysics. Dr. Sheard, Dr. Baldes, Dr. Williams.

In addition to the above, students in biophysics may do research work in physiology in the foundation or at the Medical School, and in biology in the University at Minneapolis. For details, see these departments.

BIOSTATISTICS

A. Courses Offered at the Medical School

Professor Richard E. Scammon, Ph.D., LL.D.; Assistant Professor Alan E. Treloar, Ph.D.

Courses in mathematics, economic statistics, and those sciences deemed necessary to a broad understanding of biological measurement, may be required in individual cases at the discretion of the adviser as part of the major program.

Master's degree.—Offered in general under Plan A. In special cases Plan B may be accepted.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

P.M.&P.H.110f. 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 to be taken concurrently. 3 credits. Dr. Treloar.

P.M.&P.H.111f,s,‡ Biostatistics Laboratory. Practical training in machine calculation and statistical techniques discussed in Course 110. 2 credits. Dr. Gunstad.

P.M.&P.H.120w. Correlation Analysis. Total, partial, and multiple correlation and regression; correlation ratio; contingency; biserial methods; tetrachoric correlation; rank-order correlation; the symmetrical table and intra-class correlation. Course 121 to be taken concurrently. Prerequisite: Course 110. 3 credits. Dr. Gunstad.

P.M.&P.H.121w,‡ Correlation Laboratory. Practical training in the above techniques of correlation analysis. 2 credits. Dr. Gunstad.

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

- P.M.&P.H.130s. Statistical Inference. A discussion of the sampling distributions of the more familiar statistics, and analysis of the problems of interpretation of differences, with special reference to small samples. Course 131 may be taken concurrently. Prerequisite: Course 110. 3 credits. Dr. Treloar.
- P.M.&P.H.131s.‡ Sampling Laboratory. Study of the distributions of statistics derived from small samples by practical test. To be taken concurrently with Course 130. 2 credits. Dr. Gunstad.
- P.M.&P.H.140.* Topics in Biostatistics. Studies in special topics for advanced students. Credits as arranged. Dr. Treloar.
- P.M.&P.H.150.* Life Tables. Mortality rates and the construction of the life table. Laboratory course with discussions, offered when sufficient demand exists. Prerequisite: permission of instructor. 3 credits. Dr. Treloar.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- P.M.&P.H.210f,w,s.* Research Problems in Biostatistics. Credits as arranged. Dr. Treloar.
- P.M.&P.H.220f,w,s.* Seminar in Biostatistics. 1 credit per quarter. Dr. Scammon, Dr. Treloar.

B. Courses Offered in the Mayo Foundation

Associate Professor Joseph Berkson.

Opportunities for graduate work in biometry and medical statistics in the Mayo Foundation are in connection with the Division of Biometry and Medical Statistics in the Mayo Clinic. These may include studies in clinical as well as laboratory fields.

M253f,w,s,su.* Research Problems in Biometry. Dr. Berkson.

DENTISTRY

Graduate work for a limited number of properly prepared students is offered in certain fields of dental research and dental specialties. The work is under the direction of a joint committee in Dentistry and Medicine in the Graduate School. Candidates for admission must be graduates of an acceptable dental school with at least two years of preliminary general college work. They must also present or acquire sufficient training in the basic sciences, such as bacteriology, anatomy, pathology, physiology, and physiological chemistry, to enable them to apply these disciplines to research on some of the problems facing dentistry as one of the health sciences. The minimum training to meet this requirement at the University of Minnesota is in general the equivalent to that required of graduate students in the fields of clinical medicine. The basic science courses necessary as a foundation for advanced study are outlined under the departmental offerings in this bulletin. Altho a reading knowledge of German is recommended as highly desirable,

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

candidates for the Master's degree in dentistry are exempted from the foreign language requirement. Qualified students who give full time to their studies and absolve the requirements including a satisfactory thesis will normally require three years for the degree of master of science in dentistry.

The fields of research and specialization in which work will be directed are: oral pathology, oral surgery, orthodontia, periodontia, restorative dentistry.

A. Courses Offered at the School of Dentistry
COURSES PRIMARILY FOR GRADUATE STUDENTS

Professors Peter J. Brekhus, B.A., D.D.S., Carl W. Waldron, M.D. L.D.S., D.D.S.

204f,205w,206s. Oral Pathology. Problems in dental caries. The facilities of the School of Dentistry, in co-operation with the various departments of the Medical School, are available for investigation of the fundamental problems relating to the teeth and their investing tissues. The work will form a basis for the study of dental diseases in general and of dental caries in particular. 9 credits (or more). Dr. Brekhus and staff.

207f,208w,209s. Oral Surgery. The work will consist of laboratory and clinical training in the fundamentals of surgical oral pathology, surgical diagnosis and treatment of injuries, infections, tumors, and abnormalities of the jaws and associated parts. The clinical work will be given at the School of Dentistry, the University Hospital, and other hospitals. The major assignment will include a specific problem in oral surgery, for which the facilities of the research laboratories of the School of Dentistry, as well as those of the Medical School, will be available. 9 credits (or more). Dr. Waldron and staff.

210f,211w,212s. Orthodontia. A course of lectures, seminars, demonstrations, and clinical work in the diagnosis and treatment of malocclusion of the teeth. Its aim is to prepare graduate students for the specialty of orthodontia. 9 credits (or more). Dr. Rudolph and staff.

213f,214w,215s. Periodontia. Lectures, demonstrations, and clinical study of mouth infections, especially periodontoclasia. Methods of prevention as well as treatment, and the relationship of dietary deficiencies will be included. 9 credits (or more). Dr. R. E. Johnson and staff.

216f,217w,218s. Restorative Dentistry. The restoration of teeth to normal function and occlusion, and the replacement of missing teeth by fixed or removable bridge work and dentures. A study of the various materials and their manipulation as used in restorations. 9 credits (or more). Dr. Flagstad and staff.

B. Courses Offered in the Mayo Foundation

Associate Professors Louie T. Austin, D.D.S., Boyd S. Gardner, D.D.S.;
Assistant Professor Edward C. Stafne, D.D.S.

In addition to the graduate course in dentistry offered in the School of Dentistry, the Mayo Foundation offers assistantships in dental diagnosis and dental surgery to a limited number of graduates of class A dental colleges.

Laboratory facilities are available in dental radiography, anatomy, bacteriology, biochemistry, experimental surgery and pathology.

HISTORY OF SCIENCE

(See page 50.)

MEDICAL SOCIAL WORK

For staff and courses of study offered, see the Graduate School Bulletin, Department of Sociology.

MEDICINE

(Including Divisions of General Medicine, Nutrition, Dermatology and Syphilology, Nervous and Mental Diseases, Neurology and Psychiatry, and Physical Medicine)

The graduate work in the Department of Medicine is designed to offer opportunities for gifted men and women to prepare themselves for the practice of internal medicine or any of its subdivisions as a specialty. It also aims to guide its fellows in research in these fields and to give them a start in university teaching. Prospective fellows who have had no special work in addition to that of the ordinary undergraduate courses will profit greatly from some special work. While work in any one of the fundamental subjects might be of value, physiology, biochemistry, pharmacology, bacteriology, and pathology at the present are of the greatest importance. Work in any of these subjects might be further continued during the work in medicine to meet the requirements for a minor subject.

GENERAL MEDICINE

A. Courses Offered at the Medical School

Professors J. Charnley McKinley, M.D., Ph.D., Head; Moses Barron, B.S., M.D., George E. Fahr, B.S., M.D., Henry E. Michelson, B.S., M.D., J. Arthur Myers, M.D., Ph.D., Henry L. Ulrich, B.S., M.D., S. Marx White, B.S., M.D.; Associate Professor Cecil J. Watson, M.D., Ph.D.; Assistant Professor Wesley W. Spink, M.D.

For graduate work in internal medicine the University Hospital (officially, the University of Minnesota Hospitals) and the Minneapolis General Hospital afford a wide range of clinical material both in the wards and in the outpatient departments. For research work there are opportunities at the University Hospital in its laboratories for biochemistry, cardiography, basal metabolism, and experimental medicine. Similar opportunities may be made available at the Minneapolis General Hospital.

Anatomy, bacteriology, biochemistry, pathology, immunology, pharmacology, and physiology have their laboratories and teaching centers on the campus, and the pursuit of a minor subject to the extent required by the Graduate School may be carried on alongside of, and in intimate relation to, the more definitely clinical studies. The large autopsy service of the Department of Pathology gives experience in this field and provides control of clinical diagnosis.

The more intensive clinical studies of the fellow are carried on in one or both of the hospitals mentioned and the outpatient departments are utilized to the degree necessary for training the fellow in the type of work to be met with later in practice.

During a longer or shorter period of his fellowship the fellow will act as assistant resident physician or as resident physician in one of the hospitals. In this position he has to assume greater responsibilities in the care of the patients than during the internship.

It is required that a certain amount of time be given by the fellow to teaching.

Besides the clinical work a fellowship also includes research work toward the fulfillment of the requirements for an acceptable thesis. This work may be purely clinical, but preferably, a combined clinical and laboratory study.

The courses listed below are described in the broadest outlines for purposes of recording the character of the work done. No hard and fast program is contemplated, the individual capabilities, needs, and purposes of the fellow being given particular attention.

COURSES PRIMARILY FOR GRADUATE STUDENTS

201f,w,s,su. Clinical Medicine. Study of general diagnosis and methods of investigation and of the recording of clinical data. Emphasis placed on methods of treatment. Dr. Watson, Dr. Barron, Dr. Fahr, Dr. White, Dr. Spink.

202f,w,s,su. Diseases of the Cardiovascular Apparatus. Special study of diseases of the heart and blood vessels, including technique and application of the polygraphs, electrocardiograph, and interpretation of outlines of the heart and great vessels obtained by means of radiograms and orthodiagram. Minneapolis General Hospital and University Dispensary. Dr. Fahr.

203f,w,s,su. Research in Medicine. Dr. Watson, Dr. Fahr, Dr. Spink.

205f,w,s,su. Tuberculosis. Opportunities in the study of problems relating to tuberculosis are offered. Problems may be studied, both from the clinical and laboratory standpoint. An outpatient department is also available. Dr. Myers.

See Courses 102, 105, 106 under Medicine in the Medical School Bulletin.

B. Courses Offered in the Mayo Foundation

Professors Russell M. Wilder, M.D., Ph.D., Walter C. Alvarez, M.D., Arlie R. Barnes, M.D., M.A., M.S. in Med., Walter M. Boothby, M.D., M.A., M.S. in Med., George B. Eusterman, M.D., Herbert Z. Giffin, B.S., M.D., Norman M. Keith, B.A., M.D., Willis S. Lemon, M.D.; Associate Professors Edgar V. Allen, M.D., M.A., M.S. in Med., J. Arnold Bargaen, B.S., M.D., M.S. in Med., Nelson W. Barker, B.A., M.D., M.S. in Med., Fred W. Gaarde, B.S., M.D., Philip S. Hench, B.A., M.D., M.S. in Med., Bayard T. Horton, B.S., M.D., M.S. in Med., Edwin J. Kepler, B.S., M.D., M.S. in Med., Archibald H. Logan, M.D., Herman

J. Moersch, B.S., M.D., M.S. in Med., William A. Plummer, M.D., Albert M. Snell, B.S., M.D., M.S. in Med., Charles H. Watkins, M.D., Ph.D., Fredrick A. Willius, B.S., M.D., M.S. in Med.; Assistant Professors David M. Berkman, B.S., M.D., M.S. in Med., John M. Berkman, M.D., M.S. in Med., Melvin W. Binger, M.A., M.D., Alex E. Brown, B.S., M.D., M.S. in Med., Philip W. Brown, B.A., M.D., M.S. in Med., Mandred W. Comfort, B.A., M.D., M.S. in Neur., Austin C. Davis, B.A., M.D., Della G. Drips, M.S., M.D., Thomas J. Dry, Ch.B., M.B., M.A., M.S. in Med., Harold C. Habain, B.A., M.D., Samuel F. Haines, B.S., M.D., M.S. in Med., Dorr F. Hallenbeck, M.D., Howard R. Hartman, B.S., M.D., Frank J. Heck, B.S., M.D., M.S. in Path., Duncan M. Masson, B.A., M.D., Charles K. Maytum, M.D., Monte C. Piper, M.D., Lee W. Pollock, B.S., M.D., Louis E. Prickman, M.D., M.S. in Med., Andrew B. Rivers, M.D., M.S. in Med., M.A., Edward H. Rynearson, B.A., M.D., M.S. in Med., Harry L. Smith, M.D., M.S. in Med., Elmer G. Wakefield, B.S., M.D., James F. Weir, B.A., M.S., M.S. in Med., Harry G. Wood, M.D., C.M.; Instructors Mark J. Anderson, B.S., M.D., Hugh R. Butt, M.D., M.S. in Med., Byron E. Hall, M.D., Ph.D., Wallace E. Herrell, M.D., M.S. in Med., Edgar A. Hines, M.D., M.S. in Med., M.A., H. Corwin Hinshaw, M.D., Ph.D., Giles A. Koelsche, M.D., Ph.D. in Med., Howard H. Odel, M.D., M.S. in Med., Charles H. Slocumb, M.D., M.S.

The clinical work in internal medicine in Rochester consists of diagnostic work in the clinic or in the hospital medical services, includes history taking, physical examinations, the recommendation of patients for special examinations with correlation of the results thereof, and the formation of independent judgments concerning diagnoses and indications and recommendations for medical and surgical treatment. This work is under the immediate direction of the head associate or first assistant of the section in which the fellow is working.

Each service consists of six days each week for six months, except as noted, in a clinical section. There are fifteen general diagnostic sections in which the fellow may work in the clinic and eighteen medical hospital services. Each of the general diagnostic sections is general in the sense that any patient may be referred to any one of them. Many of them however are special in that they have fields of intensive interest as follows: Dr. Plummer, Dr. Haines, Diseases of the Thyroid; Dr. Wilder, Metabolic Diseases; Dr. Berkman, Dr. Hallenbeck, Acute Abdominal Diseases; Dr. Logan, Intestinal Diseases; Dr. Gaarde, Allergic Diseases; Dr. Lemon and Dr. Moersch, Diseases of the Chest, and Bronchoscopy and Esophagoscopy; Dr. Giffin, Diseases of the Blood; Dr. Allen, Vascular Diseases; Dr. Willius, Diseases of the Heart, Dr. Barnes and Dr. Keith, Cardiovascular and Renal Diseases; Dr. Alvarez, Dr. Eusterman, Dr. Snell, Gastrohepatic Diseases; Dr. Mussey, Dr. Randall, Gynecologic Diseases.

The satisfactory completion of at least four services of six months each in these sections is required for recommendation for an advanced degree. When he is sufficiently competent in clinical work the fellow may be ap-

pointed to a first assistantship in the Mayo Clinic for a period of one year.

The Medical Department has available between four and five hundred beds in the several hospitals.

Fellows lacking in autopsy experience may take a service of six months or more in the Section of Pathologic Anatomy. (Such a service gives good experience in autopsy technic and diagnosis).

In graduate work in medicine the didactic lecture plays but a minor rôle. In the diagnostic clinic and hospitals much of the teaching is done in seminars, ward rounds, and by contact between the member of the faculty and the fellow in the handling of the patients, or in the carrying out of laboratory procedures. In both clinical and hospital sections the fellow assists in the actual work of these sections under the supervision of the head of the section and his associates.

In clinical seminars cases of unusual interest are discussed and presented. In the hospital services additional seminars are conducted on special phases of medicine, on laboratory methods, and on current medical literature. Clinico-pathologic conferences are conducted in cases coming to operation and necropsy. In these seminars the fellows themselves play an active rôle in presenting to the group cases or subjects which have been assigned to them.

In the laboratories fellows are given every opportunity to work out for themselves the problems of their choice or to participate in investigations being carried out by members of the staff.

As soon as he becomes oriented, each fellow is expected to find time, in addition to his clinical work, to begin to carry forward consistently some research. While they may be purely clinical, in most instances it will be found to have relationships requiring detailed study in physiology, physiological chemistry, pathology, or bacteriology.

Tho the minimum time required for recommendation for the degree of master of science or doctor of philosophy for work done in these fields is three years, it is found that considerably more time is often desirable.

M255f-w,w-s,su-f. General Medical and Surgical Diagnosis. Research. Seminar. Dr. Wilder, Dr. Alvarez, Dr. Barnes, Dr. Eusterman, Dr. Giffin, Dr. Keith, Dr. Allen, Dr. Gaarde, Dr. Hench, Dr. Logan, Dr. Moersch, Dr. Plummer, Dr. Snell, Dr. Willius, Dr. D. M. Berkman, Dr. Haines, Dr. Hallenbeck, Dr. Pollock, and associates.

M256f,w,s,su. Medical Hospital Residence. Research. Seminar. Dr. Wilder, Dr. Alvarez, Dr. Barnes, Dr. Eusterman, Dr. Giffin, Dr. Keith, Dr. Lemon, Dr. Allen, Dr. Gaarde, Dr. Hench, Dr. Logan, Dr. Moersch, Dr. Plummer, Dr. Snell, Dr. Willius, Dr. D. M. Berkman, Dr. Haines, Dr. Hallenbeck, Dr. Pollock, and associates.

M262f-w,w-s,s-su,su-f. Diagnosis in Neurology and Psychiatry. (See Division of Neurology and Psychiatry.)

M281f,w,s,su. Clinical Pathology. (See Department of Pathology.)

M283f-w,w-s,s-su,su-f. Necropsy Service. (See Department of Pathology.)

M290f-w,w-s,s-su,su-f. Research Work on Selected Problems in Experimental Physiology. (See Department of Physiology and Physiological (Bio) Chemistry.)

In addition to the above, fellows majoring in internal medicine may take work in biochemistry, biophysics, experimental physiology, ophthalmology, neurology, dermatology, psychiatry, Roentgen therapy, and radium therapy. For details, see these departments.

NUTRITION

B. Courses Offered in the Mayo Foundation

Professor Russell M. Wilder, M.D., Ph.D.; Assistant Professor Mary A. Foley.

Opportunity is provided for a few fellows majoring in nutrition. This work is under the supervision of the Departments of Medicine and Biochemistry, Physiology and Physiological (Bio) Chemistry.

M257f,w,s,su. Nutrition. Dr. Wilder, Miss Foley.

DERMATOLOGY AND SYPHILOLOGY

A. Courses Offered at the Medical School

Professors Henry E. Michelson, B.S., M.D., Samuel E. Sweitzer, M.D., Assistant Professors Francis W. Lynch, M.D., M.S., Carl W. Laymon, M.D., Ph.D.

Graduate instruction in dematology and syphilology is offered at the University Hospital and the General Hospital in Minneapolis and at the Ancker Hospital in St. Paul, combined with attendance at the clinics at the three hospitals. The first year is spent as a resident at the General Hospital, the second and third years are outlined by arrangement. The student is required to devote full time and is not permitted to carry on any practice and is eligible to a master of science or a doctor of philosophy degree if the requirements are fulfilled. The following courses are offered to graduate students only.

There is a great opportunity for interdivisional and interdepartmental courses which may be duly accredited.

COURSES PRIMARILY FOR GRADUATE STUDENTS

267f,w,s,su. Dermatology and Syphilology. Dermatology and syphilology, clinic and hospital rounds. University Hospital, MWF 1:00-4:00 p.m. Dr. Michelson and staff.

268f,w,s,su. Histopathology. Normal and pathological anatomy of the skin and appendages. University Hospital, MWF 4:00-5:00 p.m. Dr. Michelson and staff.

269f,w,s,su. Syphilis Therapy. Arsphenamine, bismuth, mercury, malaria therapy. Spinal punctures, lectures. University Hospital, TTh 1:00-4:00 p.m. S 8:30-10:30 a.m. Dr. Michelson and staff.

270f,w,s,su. Dermatology and Syphilology. Clinic and hospital rounds. General Hospital, TTh 1:00-4:00 p.m. S 8:30-10:30 a.m. Dr. Sweitzer and staff.

- 271f,w,s,su. Dermatology in Students' Health Service. Diagnosis and therapy of dermatological diseases in university students. University Hospital, TWTh 8:30-9:30 a.m. Dr. Michelson and staff.
- 272f,w,s,su. Allergy in Dermatology. University Hospital, MWF 1:00-4:00 p.m. Dr. Michelson and staff; General Hospital, M 8:00-9:00 a.m. Dr. Sweitzer and staff.
- 273f,w,s,su. Dermatology and Syphilology. University Hospital, TTh 1:00-4:00 p.m. S 8:30-10:30 a.m. Dr. Michelson and staff; Glen Lake Sanatorium, TTh 1:00-3:00 p.m. Dr. Michelson and staff.
- The following interdepartmental courses are especially recommended:
- 274f,w,s,su. Serology. Wasserman reaction, mycology, dark-field technique. General Hospital, MWF 9:00-10:00 a.m. Dr. Lufkin.
- 275f,w,s,su. Tumor Clinic. The diagnosis and treatment of skin and mucous membrane malignancies. University Hospital, MTh 9:00-11:00 a.m. Dr. Peyton and staff.

NOTE.—The student is required to carry on an independent research under the direction of Dr. Michelson and the head of the department or division in which he wishes to do special research.

B. Courses Offered in the Mayo Foundation

Professor Paul A. O'Leary, M.D.; Associate Professor Hamilton Montgomery, M.D., M.S. in Derm.; Assistant Professor Louis A. Brunsting, M.D., M.S. in Derm.

The Department of Dermatology of the Mayo Foundation offers excellent opportunities for the study of clinical dermatology and syphilology in patients in the Mayo Clinic.

The department has special laboratories adapted to research. A dermatohistopathologic laboratory with a large collection of material is a part of the department's equipment. The general laboratories of the clinic and foundation are likewise available.

- M258f,w,s,su. Histopathology of the Skin. Laboratory and lectures. Dr. Montgomery.
- M259f,w,s,su. Diagnosis with special reference to dermatology and syphilology. Seminar. Dr. O'Leary, Dr. Montgomery, Dr. Brunsting.
- M260f,w,s,su. Hospital Residence. Care of hospitalized patients. Seminar. Dr. O'Leary, Dr. Montgomery, Dr. Brunsting.

In addition to the above, fellows majoring in dermatology and syphilology may receive instruction in hematology, mycology, serology, roentgen and radium therapy, and allergy. Biochemistry, biophysics, and experimental physiology may be elected, if desired. For details see these departments.

NERVOUS AND MENTAL DISEASES

A. Courses Offered at the Medical School

Professors Ernest M. Hammes, M.D., J. Charnley McKinley, M.D., Ph.D.; Assistant Professor Starke R. Hathaway, B.A., Ph.D.

For fellows in neuropsychiatry, excellent facilities are available for the study of the anatomy, pathology, and physiology of the nervous system. The

minor may be elected in any of these fields. Course work in the Department of Psychology can be arranged; in fact, courses in any of the university departments fundamental to or allied with neuropsychiatry may be taken with the approval of the adviser.

In addition to the work in the University Hospital on the Neurologic Service, in the Psychopathic Unit, and the Outpatient Department, the student has access to the Minneapolis General Hospital, the St. Paul City and County Hospital, as well as to the Child Guidance Clinic established in Minneapolis.

The fellow is given a clinical assignment in the In- and Out-Patient services of the University Hospital with the responsibility to his service chief for the clinical study and therapy of his patients. He makes daily informal rounds with his superior staff, weekly clinical conferences with the director of the division, prepares cases for presentation at formal weekly staff conferences and for the clinics given undergraduate medical students. He helps conduct the pedagogical work of the clerkship of senior medical students. He reports on the literature or on his special studies in staff conferences from time to time.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 207f,w,s,su. Pathology of the Nervous System. The preparation of gross and microscopic material from diseased nervous tissues; the relation of pathologic lesions to signs and symptoms; the chief neuron systems and principles underlying their degeneration. Dr. McKinley.
- 208f,w,s,su. Clinical Neurology. Advanced diagnosis of the nervous system diseases. Practical experience in diagnostic and therapeutic procedures. Dr. Hammes, Dr. McKinley, Dr. Gray.
- 208xf,w,s,su. Clinical Psychiatry. Advanced diagnosis and therapy of the major and minor psychoses. Psychopathology. The technique of a psychopathic hospital. Dr. McKinley, Dr. Gray, Dr. Hathaway.
- 209f,w,s,su. Research in Neurology and Psychiatry. Dr. McKinley, Dr. Hathaway.

NEUROLOGY AND PSYCHIATRY

B. Courses Offered in the Mayo Foundation

Professor Emeritus Walter D. Sheldon, B.S., M.D.; Professor Henry W. Woltman, M.D., Ph.D. in Neur.; Associate Professors Frederick P. Moersch, B.S., M.D., Benjamin F. Smith, M.D.; Instructors Lealdes M. Eaton, M.D., M.S. in Neur., Alexander R. Maclean, M.D., M.S. in Neur.

A practical clinical course for fellows in neurology and psychiatry is conducted. Besides clinical work this includes a daily conference on cases of special diagnostic importance, a weekly conference for the review of current neurologic and psychiatric literature, and a weekly clinical pathological conference for the study of autopsy material. For fellows majoring in neurology special work in neuropathology, neuroanatomy and neuro-ophthalmology is offered.

Opportunities in psychiatry in the clinic are now supplemented by residencies in the Rochester State Hospital for the Insane. These residencies are granted only to fellows with adequate preparation in neurology and psychiatry. These are for a minimum period of six months. In addition to the usual fellowship stipends these fellowships provide maintenance during the period of residence.

This department is closely associated with the Department of Ophthalmology and Otolaryngology, and with various laboratories for the study of neurology as a specialty and its relationship to general medicine.

158s. Anatomy. Special Histology and Neurology of the Head Region. Dr. Rasmussen. (See Anatomy 158.)

M261f,w,s,su. Neuropathology. Open to fellows who are majoring in neurology and who have had adequate preparation in general pathology. Dr. Kernohan.

M262f-w,w-s,s-su,f. Diagnosis in Neurology and Psychiatry. Research. Seminar. Dr. Moersch, Dr. Smith, Dr. Eaton, Dr. Maclean.

M263f,w,s,su. Neurologic Hospital Residence. Research. Seminar. Dr. Shelden, Dr. Woltman, Dr. Moersch.

M264f,w,s,su. Special Psychiatry at the Rochester State Hospital for the Insane. Residence. Dr. Woltman, Dr. Moersch, Dr. Smith.

In addition to the above, fellows majoring in neurology may take work in experimental physiology, necropsy service, and neuro-ophthalmology. For details, see these departments.

PHYSICAL MEDICINE

B. Courses Offered in the Mayo Foundation

Associate Professor Frank H. Krusen, M.D.

At present there is great need for well-trained medical men in the field of physical medicine. Hospitals and teaching institutions have sent a number of requests to the foundation for men with such training.

Clinical training is provided in the three departments of physical therapy and the department of fever therapy. Ample opportunity for clinical research is available. Instruction in light therapy, thermotherapy, fever therapy, hydrotherapy, electrotherapy, and mechanotherapy is provided. Special seminars in didactic phases of physical medicine are offered. Opportunities in related fields may be arranged.

M265f,w,s,su. Physical Medicine. Dr. Krusen.

M266f,w,s,su. Special service in physical therapy as related to orthopedic surgery. Dr. Krusen.

M267f,w,s,su. Fever therapy open to fellows majoring in medicine, gynecology, urology, or physical medicine. Dr. Krusen.

OBSTETRICS AND GYNECOLOGY

A. Courses Offered at the Medical School

Professors John L. McKelvey, B.S., M.D., Head; John L. Rothrock, M.D., M.A.; Assistant Professor Lee W. Barry, M.D., Ph.D.

Of the courses in other departments open to graduate medical students, the following are especially recommended for those desiring to specialize in obstetrics and gynecology.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

Anatomy 133f,134f,s,su. Fetal Anatomy. Dissection of fetus and newborn.

Anatomy 137f,w,s. Implantation and Placentation.

Anatomy 153f-154w-155s-156su. Advanced Anatomy. Gross and histological, of the female generative organs and abdomen.

Pathology 118s. Gynecological Pathology.

Pharmacology 104, 109a,b. Experimental Pharmacology.

Physiology 153f,w,s,su. Problems in Physiological Chemistry.

Other courses in fundamental or clinical subjects may be elected.

The following graduate courses are offered in the Department of Obstetrics and Gynecology (at Minneapolis):

121f-122w-123s-124su. Clinical Obstetrics and Gynecology. A course in diagnosis and treatment, with special study of selected cases. Clinic in the Outpatient Department of the University Hospital. Required of teaching fellows. Dr. McKelvey and staff.

COURSES PRIMARILY FOR GRADUATE STUDENTS

201f-202w-203s-204su. Advanced Obstetrics and Gynecology. Includes service in the University Hospital or Minneapolis General Hospital, or Ancker Hospital, St. Paul, affording ample opportunity for experience in diagnosis, care, and treatment (operative and nonoperative) of patients. Special facilities are offered for study of problems and cases of unusual interest. Required of first year fellows. Dr. McKelvey and staff.

205f-206w-207s-208su. Similar to Course 201-204, but more advanced, both in clinical and research aspects of the subjects adapted to the increased training and experience. Required of second year fellows. Dr. McKelvey and staff.

209f-210w-211s-212su. Similar to Courses 201-204 and 205-208, but more advanced. Required of third year fellows. Dr. McKelvey and staff.

213f-214w-215s. Staff Conference Seminar. A conference, including the fellows and graduate students. Presentation and discussion of original work and reports upon the current literature in obstetrics and gynecology. Dr. McKelvey and staff.

216f-217w-218s-219su. Research. Clinical and laboratory research upon problems in obstetrics and gynecology. Required of third year fellows, who

must complete a satisfactory thesis during the year. Elective for second year fellows or other properly qualified graduate students. Dr. McKelvey and staff.

B. Courses Offered in the Mayo Foundation

Professor Robert D. Mussey, M.D.; Associate Professor Lawrence M. Randall, M.D., M.S. in Obst. and Gyn.; Assistant Professor Della G. Drips, M.D., M.S.; Instructor Arthur B. Hunt, B.A., B.S., M.D.

Limited opportunities for work in obstetrics are available with Dr. Mussey, Dr. Randall, Dr. Hunt.

M268f-w,w-s,s-su,su-f. General Medical and Surgical Diagnosis. Research. Seminar. Dr. Mussey, Dr. Randall, Dr. Drips, Dr. Hunt. (See Department of Medicine.)

M269f-w,w-s,s-su,su-f. Clinical Obstetrics and Gynecology. Diagnosis and treatment with special study of selected obstetric and gynecologic cases. Residence. Seminar. Dr. Mussey, Dr. Randall, Dr. Hunt.

M284f-w,w-s,s-su,su-f. Surgical and Fresh Tissue Pathology. (See Department of Pathology.)

M301f,w,s,su. Operative Surgery. Dr. Masson, Dr. Counsellor, Dr. Waugh. (See Department of Surgery.)

In addition to the above, students majoring in obstetrics and gynecology may take work in experimental physiology, regional anesthesia, and radium therapy. For details, see these departments.

OPHTHALMOLOGY, OTOTOLOGY, RHINOLOGY, AND
LARYNGOLOGY (including Plastic Surgery)

The graduate courses in these subjects are designed to prepare selected men for advanced work in the various lines, to prepare them for practice in these specialties, and to develop research and productive work in these subjects.

Of elective courses in other departments, the following are highly desirable.

- Physics of Light and Acoustics
- Advanced Anatomy of the Head and Neck
- Topographic Anatomy of the Head and Neck
- Developmental Anatomy of the Head
- Advanced Histology and Neurology of Eye, Ear, Nose, and Throat
(Dr. Rasmussen)
- Physiologic Optics Seminar
- Immunity
- Advanced Neuropathology

OPHTHALMOLOGY

A. Courses Offered at the Medical School

Professor Frank E. Burch, M.D., Head; Associate Professor John S. Macnie, B.A., M.D.; Clinical Associate Professor Walter E. Camp, M.D. M.A.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- 100f,w,s. Refraction. Lectures and demonstrations on the theory of refraction. Dr. Hymes, Dr. Houkom.
- 101f,w,s. Advanced Refraction. Practical work in the refraction clinics at the University and Wilder dispensaries. Dr. Hymes, Dr. Houkom. Wilder Dispensary, Dr. Edward Burch, Dr. T. J. Edwards Dr. Prendergast.
- 102f,w,s. Clinical Ophthalmology. Diagnosis and treatment of diseases of the eye. Daily attendance at the dispensaries. 132 hours per quarter. Dr. F. E. Burch, Dr. Macnie, Dr. Hansen, Dr. Hymes.
- 103f. Biomicroscopy. 22 hours. Dr. Edward Burch.
- 104w,s. Ocular Muscles. 22 hours. Dr. Grant.
- 105w. Perimetry. 16 hours. Dr. Edward Burch.
- 106f,w,s. Surgery of the Eye. Operative clinic in the University Hospital. 32 hours per quarter. Daily service in the University Hospital. Required of second year fellows who will serve as assistants in operative and other clinical work. Dr. F. E. Burch, Dr. Macnie, Dr. Hansen, Dr. Hymes.
- 107w. Pathology of the Eye. 22 hours. Dr. Camp.
- 108f. Ophthalmoscopy. 22 hours. Dr. T. J. Edwards.
- 109s. Neuro-Ophthalmology. Lectures and demonstrations. 12 hours. Dr. McKinley, Dr. Edward Burch.
- 110w,s. Physiologic Optics. Dr. Houkom.
- 111w,s. Physiology of Vision and Physiologic Optics. Dr. Pfunder.
- 112f,w,s. Seminar in Ophthalmology. 16 hours. Dr. F. E. Burch and staff.
- 113f. Advanced Anatomy of the Eye and Adnexa. Dr. Brown.
- 114f. Histology of the Eye. 22 hours. Dr. Prendergast.
- 115w. Radiology of the Eye, Orbit, and of the Head. Dr. Rigler and staff.
- 116s. Plastic Surgery of the Eye and Adnexa. Dr. Ritchie.
- 117w. Allergy of the Eye. Dr. Hansen.

OTOLOGY, RHINOLOGY, AND LARYNGOLOGY

A. Courses Offered at the Medical School

Professor Horace Newhart, B.S., M.D., Head; Assistant Professors C. Alford Fjelstad, M.D., M.S., Kenneth A. Phelps, M.D., Fred J. Pratt, M.D.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- 120f,w,s,su. Clinical Otology. Diagnosis and treatment of diseases of the ear. Daily attendance in the dispensaries. 132 hours per quarter. Dr. Newhart, Dr. Fjelstad, Dr. Bryant.
- 121f,w,s,su. Clinical Rhinology and Laryngology. Diagnosis and treatment of diseases of the nose and throat. Daily attendance in the dispensaries. 132 hours per quarter. Dr. Boies.
- 122f,w,s,su. Surgery of the Ear, Nose, and Throat. Operative clinic in the University Hospital. 32 hours per quarter. Daily service in the University Hospital. Required of second year fellows, who will serve as

- assistants in operative and other clinical work. Dr. Newhart, Dr. Boies, Dr. Fjelstad, Dr. Phelps.
- 123f,w. Operative Surgery of the Temporal Bone. 22 hours. Dr. Newhart, Dr. Fjelstad.
- 124f,w. Operative Surgery of the Nose and Throat. 22 hours. Dr. F. J. Pratt.
- 125s. Roentgenology of the Head. (See Radiology 201.) 10 hours. Dr. Rigler.
- 126w. Functional Ear Tests. 11 hours. Dr. Newhart, Dr. Fjelstad.
- 127f. Endoscopy. Lectures and demonstrations. 22 hours. Dr. Phelps.
- 128f. Pathology of the Ear, Nose, and Throat. 22 hours. Dr. Connor.
- 129s. Endocranial Complications of Ear Diseases. 10 hours. Dr. Newhart.
- 130s. Physiotherapy and Surgery of Malignant Diseases of the Ear, Nose, and Throat. 6 hours. Dr. Stenstrom, Dr. Peyton, Dr. Boies.
- 132s. Conferences on Otolological Subjects. Primarily for first year fellows. Hours arranged. Dr. Newhart, Dr. Fjelstad.
- 133f. Conferences on Rhinological Subjects. Dr. F. J. Pratt.
- 134f. Conferences on Laryngological Subjects. Dr. Boies.
- 135f. Diseases of the Labyrinth. 6 hours. Dr. Fjelstad.
- 136f. Ophthalmoscopic and Perimetric Findings in Endocranial Complications. 4 hours. Dr. Edward Burch.
- 137s. Speech Pathology. 6 hours. Dr. Bryngelson.
- 138s. Allergy. 10 hours. Dr. Ellis.
- 139w. Practical Acoustics for Otologists. 6 hours. Dr. Hartig.

B. Courses Offered in the Mayo Foundation

Professor William L. Benedict, M.D.; Associate Professors Avery D. Prangen, M.D., Henry P. Wagener, M.D., M.S. in Ophthalmology; Assistant Professor C. Wilbur Rucker, M.D., M.S. in Ophthalmology; Instructor Hugo L. Bair, M.D.

- M270f,w,s,su. Pathology of the Eye. Dr. Broders, Dr. Kernohan.
- M271f,w,s,su. Refraction and Ophthalmic Myology. Theory of refraction, retinoscopy, diagnosis of refractive errors of the eye, prescribing of lenses, practical work on patients under supervision of instructor. Eye movements, disturbances of motility of the eyes. Dr. Prangen.
- M272f,w,s,su. Clinical Ophthalmology. External diseases of the eye, ophthalmoscopy, ophthalmic surgery. Dr. Benedict, Dr. Bair.
- M273f,w,s,su. Medical Ophthalmoscopy. Ophthalmology in relation to general diseases. Dr. Wagener, Dr. Rucker.
- M274f,w,s,su. Neuro-Ophthalmology. Ophthalmology in relation to diseases of the nervous system. Physiology of the eye, psychology of vision, functional eye disturbances. Dr. Wagener, Dr. Bair.

In addition to the above, students majoring in ophthalmology may take work in biophysics, physiologic optics, ophthalmic pathology, or otolaryngology and rhinology. For details, see these departments.

OTOLARYNGOLOGY AND RHINOLOGY
(Including Plastic Surgery)

B. Courses Offered in the Mayo Foundation

Professors Harold I. Lillie, M.D., M.S., Gordon B. New, D.D.S., M.D.; Associate Professors Fred A. Figi, M.D., Bert E. Hempstead, B.A., M.D.; Assistant Professors Fred Z. Havens, M.D., Henry L. Williams, M.D., M.S. in Otolaryngology.

M275f,w,s,su. Diagnostic and Outpatient Service. Diagnosis of neoplasms of the nose, throat, mouth, and neck. Plastic surgery of face and neck (preoperative and postoperative treatment). Advanced laryngology as related to neurology and general medicine. Six months. Dr. New, Dr. Figi, Dr. Havens.

M276f,w,s,su. Hospital Service. Hospital residence. Operative and other treatment of tumors of the nose, throat, and mouth. Plastic surgery of the face and neck (operative). Six months. Dr. New, Dr. Figi, Dr. Havens.

M277f,w,s,su. Clinical Otolaryngology and Rhinology. Theory and practice with differential diagnosis of diseases of the ear, nose, accessory sinuses, pharynx, and larynx, and their relations to general diagnosis. Dr. Lillie, Dr. Hempstead, Dr. Williams.

M278f,w,s,su. Preoperative and Postoperative Care of Patients. Treatment of complications. Dr. Lillie, Dr. Hempstead, Dr. Anderson, Dr. Williams.

M279f,w,s,su. Operative Otolaryngology and Rhinology. Hospital residence, second assistantship in operating service. Dr. Lillie, Dr. Hempstead, Dr. Williams.

M280f,w,s,su. Operative Otolaryngology and Rhinology. First assistantship in operative service. Dr. Lillie, Dr. Hempstead, Dr. Williams.

In addition to the above, fellows majoring in otolaryngology and rhinology may take work in anatomy, bacteriology, biophysics, surgical pathology, and ophthalmology. For details, see these departments.

PATHOLOGY

A. Courses Offered at the Medical School

Professors Elexious T. Bell, B.S., M.D., Head; Benjamin J. Clawson, M.D., Ph.D.; Associate Professors James S. McCartney, Jr., B.A., M.D., John F. Noble, M.D.

Prerequisites.—Graduate students who desire to take their major work in pathology must present credits for the equivalent of the first two years' work of the Medical School of this University. They must also have a reading knowledge of German.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

104f,w,s,su. Autopsies. The average number of post-mortems available is about 2,500 per year. Graduate students take part in post-mortems,

prepare post-mortem records, and make microscopic examinations of various organs and tissues. The student may attend as many post-mortems as his other work allows.

107f. Surgical Pathology. Diagnosis of tumors.

107aw. Advanced Pathology. Diseases of tumors.

107bw. Surgical Pathology. Diseases of the heart.

107s. Surgical Pathology. Diseases of the kidney.

109f,w,s,su. Clinical Pathologic Conference. The students are provided one week in advance with the clinical history of a case. The case is fully discussed clinically. The students are expected, in so far as possible, to predict the post-mortem findings from the clinical data. A full post-mortem report is then given. One hour per week. Dr. Bell.

110f,w,s. Seminar in Pathology. Prerequisite: Pathology 102. Dr. Bell.

111su,f,w,s. Conference on Autopsies. Prerequisite: Pathology 102. Dr. Bell and staff.

COURSES PRIMARILY FOR GRADUATE STUDENTS

201f,w,s,su. Research. Graduate students with the necessary preliminary training may elect research, either as majors or minors in pathology. Hours and credits arranged.

B. Courses Offered in the Mayo Foundation

Professors Albert C. Broders, M.D., M.S. in Path., D.Sc., James W. Kernohan, M.B., D.P.H., M.A., William C. MacCarty, M.D., M.S., Thomas B. Magath, M.D., Ph.D., Frank C. Mann, M.D., M.A., Harold E. Robertson, B.A., M.D., Arthur H. Sanford, M.D., M.A.; Professor Emeritus Louis B. Wilson, M.D.; Associate Professors Jesse L. Bollman, M.D., M.S., William H. Feldman, D.V.M., M.S., Carl F. Schlottbauer, D.V.M.; Instructors Richard W. Cragg, M.D., M.S. in Path., John R. McDonald, M.D., M.S. in Path.

Opportunities for advanced work in pathology are offered in four different sections in the Mayo Foundation, as follows:

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

M101. Clinical Pathology. Dr. Magath, Dr. Sanford, Dr. Osterberg.

Work in this section includes diagnostic work in the laboratories of gastrology, urinalysis, serology, bacteriology, parasitology, and clinical chemistry. Graduate students in these clinical laboratories may learn the technique of accepted diagnostic procedure. Special attention is called to the opportunity for experience and research in serology under the direction of Dr. Sanford, and for training and research in parasitology under the direction of Dr. Magath. This work may be taken either as a major, or fulfilling the conditions of a minor.

M102. Pathologic Anatomy. Dr. Kernohan, Dr. Robertson.

Post-mortem examinations are made in sufficient numbers to permit approximately eight fellows being assigned to the section.

The service is designed to permit the laying of a thoro foundation in the general principles of pathologic anatomy. Each fellow serves as junior assistant three months and senior assistant three months, during which time he takes part in the routine of post-mortem examinations and studies the microscopic sections of these post-mortems, and engages in weekly conferences and seminars concerned with general and special subjects in pathologic anatomy. Each fellow is expected to take up some special line of work upon which he reports to the group. Microscopic and gross demonstrations are held at frequent intervals and the work throughout is intimately supervised. Collateral reading and study are encouraged and oftentimes the foundation may be laid for thesis subjects or special lines of research. In connection with this work there is a well-organized museum for both display and study purposes. Fellows are aided and encouraged in the use of this museum to further their knowledge.

M103. Surgical Pathology. Dr. Broders, Dr. Kernohan, Dr. MacCarty.

The laboratories of surgical pathology receive immediately all tissue removed at operation. It is studied both grossly and microscopically. The minimum residence in this service is six months, during which time opportunity is given to study a large amount of operative material in conjunction with clinical histories. Besides the routine diagnostic experience fellows are expected to begin to carry along in these laboratories some piece of pathologic research.

M104. Experimental Pathology and Comparative Pathology. Dr. Mann, Dr. Bollman, Dr. Feldman, Dr. Schlotthauer.

Work in this section consists of research in problems of pathology involving the use of experimental animals.

COURSES PRIMARILY FOR GRADUATE STUDENTS

M281f,w,s,su. Clinical Pathology. Making and examination of cultures, preparation and administration of autogenous vaccines, Wasserman tests, special clinical and laboratory methods including hematology and serology and opportunity for research. Dr. Magath, Dr. Sanford.

M282f,w,s,su. Parasitology. Routine clinical and special research in parasitology, examination of stools, study of internal parasites. Dr. Magath.

M283f-w,w-s,s-su,f. Necropsy. Service. Junior assistant three months; senior assistant three months; demonstrations in clinico-pathologic conferences; microscopic examination of fixed tissues removed at necropsy. Bacteriology and necropsy material. Research problems. Weekly seminars. Dr. Kernohan, Dr. Robertson.

M284f-w,w-s,s-su,f. Surgical and Fresh Tissue Pathology. The diagnosis of surgical specimens (gross and microscopic) with immediate correlation with all clinical data. Bacteriology of surgical material. Research problems. Daily demonstrations and discussions. Dr. Broders, Dr. MacCarty.

M285f,w,s,su. Research Work on Selected Problems in Experimental Pathology. Dr. Mann, Dr. Bollman.

M286f,w,s,su. Research Work on Selected Problems in Comparative Pathology. Dr. Feldman, Dr. Schlotthauer.

In addition to the above, students majoring in pathology may do research work in biophysics, physiological chemistry, experimental physiology, and bacteriology. For details, see these departments.

PEDIATRICS

The graduate work of the Department of Pediatrics is arranged with the intention (a) of preparing students to become competent pediatricists; (b) to put them in a position to attack original pediatric problems; and (c) to make them competent teachers in the subject.

A. Courses Offered at the Medical School

Professor Irvine McQuarrie, M.D., Ph.D., Head; Clinical Professors Edgar J. Huenekens, M.D., M.A., Frederick C. Rodda, M.D., Max Seham, M.D., Chester A. Stewart, M.D., Ph.D.; Associate Professors Arild E. Hansen, M.D., Ph.D., Albert V. Stoesser, M.D., Ph.D.; Clinical Associate Professor Erling S. Platou, B.S., M.D.; Assistant Professor Mildred R. Ziegler, Ph.D.; Clinical Assistant Professors Hyman S. Lippman, M.D., Ph.D., W. Raymond Shannon, M.S., M.D.

The work of the department is conducted in the pediatric research laboratories, the wards, and the Outpatient Department of the University Hospital and at the Minneapolis General Hospital. The child welfare organizations and the child guidance clinics of Minneapolis and St. Paul afford additional opportunities for all phases of preventive pediatrics.

The general library of the University with almost complete files of journals dealing with pediatrics furnishes adequate reference facilities.

Research laboratories attached to the Department of Pediatrics and the large general laboratories attached to the Departments of Anatomy, Bacteriology, Pathology, Pharmacology, and Physiology are at the disposal of the graduate students, and afford every possible opportunity for research.

As a prerequisite a general understanding of physiological and analytical chemistry, bacteriology, immunology and pathology, and a reading knowledge of French and German are essential.

Students will be required to carry a minor in some of the fundamental branches or in allied fields. Courses leading to higher degrees can be arranged by consultation with members of the graduate teaching faculty.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS*

100f,w,s,† Physiology and Diseases of the Newborn. Dr. Rodda, Dr. Shannon.

102f,w,s,† Fundamental Principles of Nutrition and Metabolism As Applied to Children. Seminar course. Dr. McQuarrie, Dr. Hansen, Dr. Ziegler.

104f,w,s,† Endocrinology As Applied to Pediatrics. Seminar course. Dr. McQuarrie, Dr. Thompson.

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

† Not offered to fewer than 10 students.

- 106f,w,s.† Advanced Study of Noncontagious Diseases. Both clinical and experimental subject-matter included. Dr. McQuarrie, Dr. Hansen, Dr. Thompson.
- 108f,w,s.† Advanced Study of Contagious Diseases. Dr. Platou.
- 110f,w,s. Allergic Disorders in Childhood. Dr. Stoesser.
- 112f,w,s. Common Behavior Disturbances in Childhood—Their Recognition and Management. Dr. Lippman.
- 114f,w,s.† Rare and Unusual Diseases of Infancy and Childhood. Seminar course. Dr. Stewart.
- 116f,w,s. Weekly Seminar for Detailed Discussion of Fundamental Subjects Related to Pediatrics. Dr. McQuarrie, Dr. Ziegler.
- 118f,w,s. Speech Disturbances in Childhood. Clinic course. Dr. Bryngelson, Dr. Carolyn Adams.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 200f,w,s,su. Amphitheater Clinic in Pediatrics. 11 hours credit per quarter. Dr. McQuarrie and senior staff.
- 202f,w,s,su. Pediatric Clinic. Outpatient Department, University Hospital. Daily, 9:00-12:00. Dr. Stewart.
- 204f,w,s,su. Course consisting of three to twelve months' residence in pediatrics at the University Hospital. Dr. McQuarrie, Dr. Hansen, Dr. Ziegler, Dr. Thompson.
- 206f,w,s,su. Course consisting of three to twelve months' residence in pediatrics and contagious diseases at the Minneapolis General Hospital. Dr. Huenekens, Dr. Seham, Dr. Stoesser, Dr. Platou, Dr. Dwan, Dr. Wilder.
- 208f,w,s,su. Pediatric Research. Special problems in various subdivisions of the pediatric field may be selected for study. Students may collaborate with members of the staff or with other students where suitable arrangements can be made.

B. Courses Offered in the Mayo Foundation

Professor Henry F. Helmholtz, B.S., M.D.; Associate Professors Samuel Amberg, M.D., Roger L. J. Kennedy, M.D., M.S. in Ped.; Instructor Charles E. Ward, B.S., M.D.

The opportunities offered in pediatrics in the Mayo Foundation are designed for the purpose of training a few selected physicians for the special practice of pediatrics. The courses are also valuable to fellows majoring in special clinical fields, for example, in internal medicine.

The work of the department comprises:

- a. The care of the newborn. Immediately after the birth of the infant the Department of Pediatrics assumes charge.
- b. The Department of Pediatrics is in charge of the work in preventive pediatrics in the city of Rochester and in Olmsted County, co-operating with the City Health Department, the Olmsted County Public Health Association. This work comprises infant welfare work as well as the care of the child of preschool and school age.

† Not offered to fewer than 10 students.

c. A special advantage lies in the large number of cases presenting unusual manifestations of common diseases, as well as those conditions which are not so frequently seen in the ordinary hospital and outpatient departments.

d. The work in the city affords a chance for routine practice in pediatrics, including the usual infectious diseases.

e. The department has a hospital service of its own. In addition it has the supervision of all children below the age of fourteen years in the other hospitals. The Department of Pediatrics co-operates with the surgical section in the preoperative and postoperative management of the patient.

f. Six months is usually spent in Minneapolis, in the Department of Pathology of the Medical School, working in gross pathologic anatomy.

g. Research is regarded as an important feature of the graduate work, and there are ample clinical and laboratory facilities for investigative study.

M204f,w,s,su. Pathology. Autopsies. Dr. Bell. (See Pathology 104.)

M286f-w,w-s,s-su,su-f. Preventive Pediatrics. Limited to two fellows. Dr. Helmholtz, Dr. Amberg.

M287f-w,w-s,s-su,su-f. Diagnosis of Medical and Surgical Diseases of Infancy and Childhood. Research. Seminar. Dr. Helmholtz, Dr. Amberg, Dr. Kennedy.

M288f-w,w-s,s-su,su-f. Pediatrics. Hospital residence. Research. Seminar. Dr. Helmholtz, Dr. Amberg, Dr. Kennedy.

In addition to the above, fellows in pediatrics may take work in physiological chemistry and experimental physiology. For details, see these departments.

PHARMACEUTICAL CHEMISTRY

Courses Offered in the College of Pharmacy

Professors Charles H. Rogers, D.Sc., Glenn L. Jenkins, Ph.D.; Assistant Professor Ole Gisvold, Ph.D.

Graduate work is offered to a limited number of students properly prepared for advanced work in pharmaceutical chemistry. The same standards of preparation are required as are set for other fields of specialization. Students interested in such work should submit their credentials for approval before presenting themselves for matriculation. In general, work leading to the master of science degree is offered under Plan A. In exceptional cases, Plan B may be offered by petition.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

154w,155s.‡ Biological Assay of Drugs. This course includes didactic and laboratory consideration of the biological assays of the vegetable and animal drugs of the United States Pharmacopoeia and National Formulary. Elective. 6 credits. Dr. Rogers, Dr. Fischer.

161f,162w,163s. Organic Medicinal Products. This course treats of the sources, methods of production, classification, properties, reactions, and

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

- uses of the natural and synthetic organic compounds used as therapeutic agents. Prerequisite: Organic Chemistry 2w or 2s. 9 credits. Dr. Jenkins, Dr. Gisvold.
- 164w,165s. Drug and Food Analysis. A study of the processes of manufacture and of the composition of drug and food products. This course includes a detailed consideration of the legal requirements of the Food and Drug Act, and of the official analytical methods of the United States Pharmacopoeia, National Formulary, and the Association of Official Agricultural Chemists. Elective. Prerequisite: Pharmaceutical Chemistry 3s, Organic Chemistry 2w or 2s, Pharmaceutical Chemistry 56f. 6 credits. Dr. Gisvold.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 201f. Pharmaceutical Chemistry Seminar. Required of all students taking research in pharmaceutical chemistry. No prerequisite. 1 credit per quarter. Dr. Jenkins.
- 202f,203w,204s. Advanced Food and Drug Analysis. Identification and quantitative determination of dyes used in foods and drugs. Analyses of essential oils, glycerin products, digestants, etc. Special precision instruments. Prerequisites: Pharmaceutical Chemistry 164w, 165s. 3 to 5 credits per quarter. Dr. Gisvold.
- 205f,206w,207s. Advanced Pharmaceutical Chemistry. Syntheses of pharmaceuticals. Study of reagents and complex reactions; identification and quantitative determinations of alkaloids, glucosides, etc.; study of pH and its influence upon pharmaceutical products. Prerequisites: Organic Chemistry 1-2 and Pharmaceutical Chemistry 163s. 3 credits per quarter. Dr. Rogers.
- 208f,209w,210s. Special Problems in Food and Drug Analysis. An experimental study of the analyses of complex food and drug products. Prerequisites: Pharmaceutical Chemistry 163s, Organic Chemistry 1-2. Credits arranged. Dr. Rogers, Dr. Gisvold.
- 211f,w,s. Research in Pharmaceutical Chemistry. No prerequisite. Credits arranged. Dr. Rogers, Dr. Jenkins, Dr. Gisvold.
- 212f,213w,214s. Chemistry of Medicinal Products. A study of the chemistry and of the relationships between constitution and physiologic action of organic compounds. Isolation of active principles and syntheses of medicinal compounds. Prerequisites: Organic Chemistry 1-2 and Pharmaceutical Chemistry 163s, or consent of instructor. 3 to 6 credits per quarter. Dr. Jenkins.
- 215f,216w,217s. Pharmaceutical Plant Chemistry. A study of the chemistry and the practical methods employed to isolate, purify, identify, and analyze the constituents of crude drugs. Prerequisite: Organic Chemistry 1-2, or consent of instructor. 3 to 6 credits per quarter. Dr. Jenkins, Dr. Gisvold.
- 218f,219w,220s. History of Pharmaceutical Chemistry. No prerequisite. 1 credit per quarter. Dr. Jenkins.

PHARMACOLOGY AND THERAPEUTICS

A. Courses Offered at the Medical School

Professor Arthur D. Hirschfelder, B.S., M.D., Head; Associate Professor Raymond H. Bieter, M.D., Ph.D.; Assistant Professor Harold N. G. Wright, Ph.D.

The laboratories of the Department of Pharmacology are excellently equipped for the study of both the chemical properties of drugs and their actions upon the functions of the living organs and tissues. They are well equipped with chemical apparatus for the synthesis of new medicinal compounds, for studies upon the detection, isolation, and estimation of poisons in toxicology and for the isolation of medicinal plant constituents. By the co-operation of the clinical departments, special studies may be made of the action of drugs, old and new, upon patients in the University Hospital and allied hospitals.

Opportunities are afforded for the special study of the actions of drugs which are used in each of the clinical specialties and the literature bearing upon them. As the needs of each graduate student are individual in this regard, these studies are taken up by conference, seminar, and experiments specially devised to meet each case.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- 101w. Introduction to Pharmacology. The principles underlying the structure, physiochemical properties, physiologic, therapeutic, and toxic action of substances, natural or synthetic, used as medicines. At least one quarter of physiology is prerequisite. 22 hours; 2 credits. Dr. Hirschfelder, Dr. Bieter, Dr. Wright.
- 102s. General Pharmacology. A study of the most important drugs used in medicine with consideration of their chemical properties, actions on the normal and abnormal body, modes of administration, preparations, dosages, etc. 132 hours; 6 credits. Dr. Hirschfelder, Dr. Bieter, Dr. Wright.
- 105su,w. General Pharmacology, in continuation. Lectures on narcotic, soporific, analgesic, antipyretic drugs; remedies used for the treatment of arthritides, etc. Writing of prescriptions for the drugs used. 33 hours; 3 credits. Dr. Hirschfelder, Dr. Bieter, Dr. Wright.
- 106f. General Pharmacology, in continuation. Lectures on the salts of the metals, antiseptic, antisyphilitic drugs, chemotherapy, etc. 33 hours; 3 credits. Dr. Hirschfelder, Dr. Bieter, Dr. Wright.
- 108su,f. Prescription Writing. The principles of prescription writing. Fifth year. 11 hours; 1 credit. Dr. Wright.
- 109f,w,s,su. Pharmacological Problems. Special investigations and experimental study of one or more of the following topics: anesthetics; circulatory stimulants and depressants; drugs acting upon the kidneys; urinary antiseptics; poisons and antidotes; effects of common harmless drugs; internal secretions; action of drugs upon parasites, tumors, etc. Hours and credits by arrangement. Dr. Hirschfelder, Dr. Bieter, Dr. Wright.

110f,w,s. Poisons. Their detection, actions, and antidotes. 66 hours; 2 credits. Dr. Bieter, Dr. Wright.

Courses 101, 102, 105, 106 are not acceptable for the minor in the case of graduates of medical colleges who are candidates for the degree of master of science.

COURSES PRIMARILY FOR GRADUATE STUDENTS

201f,w,s. Seminar in Physiology and Pharmacology. Reviews of recent literature. 11 hours; 1 credit. Staff.

203su,f,w,s. Research in Pharmacology. Hours and credits arranged. Dr. Hirschfelder, Dr. Bieter, Dr. Wright.

204f,w,s. Advanced Pharmacology. With collateral readings. Limited to six advanced students. 11 hours; 1 credit. Hours arranged. Staff.

205w. General Discussions in Pharmacology. With collateral readings. Hours and credits arranged. Dr. Hirschfelder, Dr. Bieter, Dr. Wright.

B. Courses Offered in the Mayo Foundation

All opportunities for advanced work in pharmacology and therapeutics offered in the Mayo Foundation are in connection with the Departments of Medicine, Pediatrics, and Surgery. See announcements of these departments.

PHYSIOLOGY AND PHYSIOLOGICAL (BIO) CHEMISTRY

A. Courses Offered at the Medical School

Professors Maurice B. Visscher, M.D., Ph.D., Head; Herbert Freundlich, Ph.D., Jesse F. McClendon, Ph.D., Frederick H. Scott, M.D., Ph.D., D.Sc., Karl W. Stenstrom, Ph.D.; Associate Professor Ancel Keys, Ph.D.

The Department of Physiology is well equipped for the various types of physiological investigation. The library facilities are good.

For a major or minor in physiology, good courses in general zoology, general chemistry, organic chemistry, and college physics are prerequisites. Physical chemistry is desirable.

For a major or minor in physiological chemistry, physics, general chemistry, organic chemistry, and physical chemistry are prerequisite, quantitative chemistry, physiology, and zoology are desirable.

Students majoring in clinical subjects, and who desire a minor in physiology or physiological chemistry, must have had the courses in these branches usually required of medical students.

A reading knowledge of German or French is required of candidates for the Master's degree in this department, and reading knowledge of both French and German, of candidates for the Doctor's degree.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

101f,w,s,su. Physiological Chemistry. The components of the animal body; foods, digestion, and excreta, and metabolism. Prerequisites: physics, organic chemistry. 222 hours; 13 credits. Dr. McClendon, Dr. Armstrong, Dr. Hemingway, Dr. Samuels.

- 103su,f. Physiology of Circulation, Respiration, Digestion, Metabolism, Nutrition, and Excretion. Fourth year medical students and others. Prerequisites: organic chemistry and zoology. 132 hours; 9 credits. Dr. Visscher, Dr. Scott, Dr. King, and others.
- 104w,su. Physiology of Endocrines and the Nervous System. Fourth year medical students and others. Prerequisite: Course 103 or organic chemistry and neurology. 88 hours; 6 credits. Dr. Visscher, Dr. Scott, Dr. King, and others.
- 105f. Roentgen, Rays, Light, and Radium. The physical and physiological basis of physical therapy. Fifth year medical students. 11 hours; 1 credit. Dr. Stenstrom.
- 113su,f,w,s. Problems in Physiology. Arranged by instructors with qualified students. Each student will be assigned a topic for special laboratory study, leading in some cases to original investigation. Conferences and reading. May be taken one or more quarters. Prerequisites: Courses 103, 104, or equivalent. 66 hours; 3 credits each quarter or arranged. Dr. Visscher, Dr. Scott, Dr. Keys, Dr. King.
- 115w. Introduction to Research on the Physiology of Muscular Activity. Prerequisite: Physiology 51 with grade A or B, or Physiology 103; reading knowledge of German recommended. 1 hour conference, 3 hours laboratory; 2 credits. Dr. Keys.
- 116f. Tissue Culture Theory. Two lectures. Hours arranged; 2 credits. Dr. King.
- 117w. Tissue Culture Laboratory. Limit 4 students. Prerequisite: Course 116f. Hours arranged; 3 credits. Dr. King.
- 135f,w,s. Conference on Physiology, with qualified students. 11 hours; 1 credit. Dr. Visscher, Dr. Scott.
- 153f,w,s,su. Problems in Physiological Chemistry. Special work arranged with qualified students. May be taken one or more quarters. Prerequisite: Course 100-101. Hours and credits arranged. Dr. McClendon, Dr. Armstrong, Dr. Hemingway.
- 163f,164w,165s. Physical Chemistry and Biophysics in Biology and Medicine. Prerequisite: Course 100-101 or Biochemistry 112. 3 credits per quarter. Dr. Hemingway.
- 166f,167w,168s. Laboratory Work Related to Courses 163, 164, 165. Credits arranged. Dr. Hemingway.
- 170f,w,s,su. Problems in Biophysics. Special work arranged with qualified students. Dr. Stenstrom.
- 180f. General Survey of Colloid Chemistry. Prerequisite: Physiological Chemistry 103. 3 credits. Dr. Freundlich.
- 182s. Colloids in Biology and Medicine. Prerequisite: Physiological Chemistry 180. 3 credits. Dr. Freundlich.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 200s. Seminar in Physiological Chemistry.
- 201f,w,s,su. Seminar in Physiology and Pharmacology. For instructors and advanced students. 11 hours; 1 credit. Dr. Visscher, Dr. Hirschfelder, Dr. Scott, and staff.

- 203f,w,s,su. Research in Physiology. Hours and credits arranged. Dr. Vis-scher, Dr. Scott, Dr. Keys, Dr. King.
- 204f,w,s,su. Research in Physics and Physiology of Radiation. Hours and credits arranged. Dr. Stenstrom.
- 205f,w,s,su. Research in Physiological Chemistry. Hours and credits arranged. Dr. McClendon, Dr. Armstrong, Dr. Hemingway, Dr. Samuels.

EXPERIMENTAL PHYSIOLOGY

B. Courses Offered in the Mayo Foundation

Professor Frank C. Mann, M.A., M.D.; Associate Professors Jesse L. Bollman, M.D., M.S., Hiram E. Essex, Ph.D., George M. Higgins, Ph.D.

Work in this section consists of research problems in experimental physiology.

M290f,w,s,su. Research Work on Selected Problems in Experimental Physiology. Dr. Mann, Dr. Bollman, Dr. Essex, Dr. Higgins, Dr. Herrick, Dr. Flock.

BIOCHEMISTRY

B. Courses Offered in the Mayo Foundation

Professors Walter M. Boothby, M.D., M.A., Edwards C. Kendall, Ph.D.; Associate Professor Arnold E. Osterberg, Ph.D.; Assistant Professors Harold L. Mason, Ph.D., Marschelle H. Power, Ph.D.; Instructor Frank H. Stodola, Ph.D.

Many of the opportunities for graduate work in biochemistry in the Mayo Foundation are in connection with the Departments of Medicine, Pediatrics, and Clinical Pathology, for which see announcements under these several departments. In addition to these, advanced work is offered in the Department of Biochemistry to a limited number of well-prepared students.

M257f,w,s,su. Nutrition. (See Department of Medicine.)

M290f,w,s,su. Biochemistry. Research work in problems related to metabolism and the chemistry of the blood; includes training in the use of methods of organic and inorganic analysis. Dr. Boothby, Dr. Kendall, Dr. Osterberg, Dr. Mason, Dr. Power, Dr. Stodola.

In addition to the above, students majoring in biochemistry may carry on research work in experimental physiology. For details, see that department.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

A. Courses Offered at the Medical School

Professors Gaylord W. Anderson, B.A., M.D., Head; Frederic H. Bass, B.S., Ruth E. Boynton, M.D., M.S., Albert H. Chesley, M.D., Harold S. Diehl, M.A., M.D., D.Sc., Charles A. Mann, Ph.D., J. Arthur Myers, M.D., Ph.D.; Associate Professors Ellet M. deBerry, B.A., M.D.,

Orianna McDaniel, M.D., Harold A. Whittaker, B.A.; Assistant Professor Alan E. Treloar, Ph.D.; Clinical Assistant Professor Lucy S. Heathman, M.D., Ph.D.

Committee on Curriculum for Physicians: Gaylord W. Anderson, Albert H. Chesley, Harold S. Diehl.

Committee on Curriculum for Engineers: Gaylord W. Anderson, Frederic H. Bass, Harold A. Whittaker.

Committee on Curriculum for Nurses: Gaylord W. Anderson, Margaret G. Arnstein, Mellie Palmer.

Master's degree.—Offered under both Plan A and Plan B. All candidates for a Master's degree must take basic courses in (1) public health administration, (2) epidemiology, (3) statistics, (4) sanitation, and (5) public health nursing, unless specifically excused by the department.

Inquiries concerning other work in public health should be addressed to the director, Dr. G. W. Anderson, Millard Hall, University of Minnesota.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

102f. Environmental Sanitation—General. Public health supervision of water supplies, purification and distribution, the production, processing, and distribution of milk and other foods, the treatment and disposal of sewage, excreta, garbage and other wastes, bathing places; the control of occupational health hazards and of animals and insects involved in the spread of disease. Lectures, field and laboratory demonstrations. Prerequisites: Bacteriology 41, Preventive Medicine and Public Health 53, 100, or equivalent or consent of instructor. 5 credits. Mr. Whittaker, Mr. Pierce, and associates.

103f,w,s.* Public Health Bacteriology. For graduates. Bacteriologic and serologic diagnosis, public health laboratory administration and methods. Prerequisites: Bacteriology 101-102, 116 and permission of instructor. By arrangement. Dr. Heathman.

104f,w.* Epidemiology I. For physicians and others by permission. Consideration of the factors underlying the spread of infectious diseases, with detailed discussion of selected diseases; statistical and epidemiologic methods in the study of diseases. Lectures, laboratory, and seminars. Credits arranged. Dr. Anderson, Dr. Diehl, Dr. Treloar.

105s. Epidemiology II—Special. For physicians. A detailed consideration of the epidemiology of certain diseases of public health importance; study of selected source material. Prerequisite: 104. Credits arranged. Dr. Anderson.

106f,w.* Public Health Administration—General. For physicians, engineers, nurses, social workers, and others by arrangement. Structure, basic functions, and activities of public health agencies; public health laws and regulations; administrative procedures in public health practice; relationship to other governmental and social activities. 3 credits. Dr. Anderson and guest lecturers.

* With special outside work, these courses count toward the Master's degree under Plan B.

- 107f. Child and Adult Hygiene. For physicians. Promotion of hygiene through public health and community effort, maternal, infant, preschool, school, college, industrial, and adult. Lectures and field trips. 4 credits. Dr. Boynton, Dr. Ellis, and staff.
- 108f. Care of the Handicapped Child. Extent of problem; history and development of program for care; types of physical defects, means of prevention and correction; medical social aspects; mental and emotional aspects; vocational training and placement. 2 credits. Dr. Hilleboe and associates.
- 109w.* Environment and Disease. For engineers. Epidemiology of certain important diseases with special consideration of the conditions under which certain diseases of man are transmitted by water, milk, and other foods, by air with especial reference to dusts, by insects, and by animals; their relationship to occupation and their administrative control. 3 credits. Dr. Anderson.
- 112w. Environmental Sanitation—Water Supplies. Sanitary problems associated with the location, construction, and operation of water supplies, purification works, and distribution systems including a consideration of plumbing installations and fixtures; methods of public health supervision. Lectures, field and laboratory demonstrations. Prerequisites: Preventive Medicine and Public Health 109 and 102 or Civil Engineering 165 or 162. 4 credits. Mr. Whittaker, Mr. Pierce, and associates.
- 113w. Environmental Sanitation—Pollution of Waters; Sewage, Excreta, and Waste Disposal. Methods for the study and control of stream and lake pollution; public health supervision of, and methods for, treatment and disposal of sewage, excreta, garbage, and other wastes. Lectures, field and laboratory demonstrations. Prerequisites: Preventive Medicine and Public Health 109 and 102 or Civil Engineering 165 or 163. 2 credits. Mr. Whittaker, Mr. Pierce, and associates.
- 115w. Environmental Sanitation—Milk and Other Foods. Sanitary problems associated with the production, processing, and distribution of milk and other foods; methods of public health supervision. Lectures, field and laboratory demonstrations. Prerequisites: Preventive Medicine and Public Health 109 and 102 or Dairy Husbandry 51. 2 credits. Mr. Whittaker and associates.
- 116w.* Environmental Sanitation—Problems, Methods, and Organization. Sanitary problems of urban and rural communities; the control of occupational health hazards and of diseases involving insect vectors and animal hosts. Environmental sanitation in activities of federal, state, and local government. Lectures, seminars, field and laboratory demonstrations. Prerequisites: 112, 113, 115 and 106. 3 credits. Mr. Whittaker, Mr. Pierce, associates, and guest lecturers.
- 122w.* Public Health Administration Problems. Conference discussion of selected problems; relative values of different public health procedures and activities. Prerequisite: 106 or may be taken concurrently. 3 credits. Dr. Anderson.

* With special outside work, these courses count toward the Master's degree under Plan B.

- 123f,w,s. Topics in Public Health. Selected readings in public health with discussion based on those readings. Credits arranged. Prerequisite: permission of instructor. Dr. Anderson and staff.
- 170s. Supervision in Public Health Nursing. Nature of supervision, historical survey, 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 credits. Prerequisites: 53, 61, 63, or by permission. Miss Arnstein.
- 171w,s.* Advanced Problems in Public Health Nursing. For advanced students who wish to work on special problems in public health nursing. Credits arranged. Prerequisite: 170 or permission of instructor.
- 173f,w,s. Advanced Field Work in Public Health Nursing. For public health nurses only. Credits arranged. Prerequisite: 170 or permission of instructor.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 200f,w,s. Research. Opportunities will be offered by the University and by the various co-ordinated organizations for qualified students to pursue research work. Dr. Anderson, Dr. Diehl, and staff.
- 210f,w,s. Seminar in Preventive Medicine and Public Health. By arrangement. Staff.

ADDITIONAL COURSES

Other courses offered in this and the Graduate School Bulletin which contribute to work in public health:

Department	Course No.	Title	Instructor
Anatomy	160	Seminar in Human Growth	Dr. Boyd
Bacteriology	101-102	Medical Bacteriology	Dr. Larson
Bacteriology	114	Higher Bacteria	Dr. Henrici
Bacteriology	116	Immunity	Dr. Larson
Bacteriology	120	Diseases of Animals Transmissible to Man	Dr. Green
Bacteriology	124	Filterable Viruses	Dr. Green
Biostatistics	110	Biometric Principles	Dr. Treloar
Child Welfare	130-131	Child Development	Dr. Anderson
Child Welfare	190	Mental Examination of Preschool Children	Dr. Goodenough
Hydraulic Engineering	161	Hydrology	Mr. Bass
Medicine	205	Tuberculosis	Dr. Myers
Municipal Engineering	162-163	Water Supply and Sewerage	Mr. Bass
Pediatrics	108	Contagious Diseases	Dr. Platou
Political Science	120	Municipal Functions	Dr. Ludwig
Political Science	121	Municipal Administration	Dr. Ludwig
Political Science	122	Municipal Problems	Dr. Ludwig
Psychology	144-145	Abnormal Psychology	Dr. Bird
Sanitary Engineering	261-262	Water and Sewerage Purification	Mr. Bass
Sociology	100	Social Psychology	Dr. Kirkpatrick
Zoology	107-108	Protozoology	Dr. Turner
Zoology	144-145-146	Animal Parasites and Parasitism	Dr. Riley

* With special outside work, these courses count toward the Master's degree under Plan B.

RADIOLOGY

A. Courses Offered at the Medical School

Professors Leo G. Rigler, B.S., M.D., K. Wilhelm Stenstrom, Ph.D. (Physicist to Cancer Institute); Assistant Professor Robert G. Allison, M.D.

Graduates of Class A schools who have completed at least one year's satisfactory internship in a recognized hospital are eligible for an appointment as fellow in radiology. The student must carry one major and one minor branch. The major shall be in radiology and the minor in physics, anatomy, or pathology. A minimum amount of all of these latter studies is required in any event. The course extends over a period of three years including at least one year spent at the University Hospital on physics of radiation, radiation therapy, and physical therapy. Co-operation with the Department of Physics and the Division of Biophysics offers the opportunity of thoro training in the fundamental physics of radiation. The fullest application of superficial and deep radiation therapy and of the various types of physical therapy is taught.

The remainder of the course is devoted to general Roentgen diagnosis—the study of the use of Roentgen rays as a diagnostic aid in medicine. These studies are conducted chiefly in the University Hospital but with appropriate time spent in the institutions listed below. The X-ray departments of these institutions are fully equipped with modern diagnostic and therapeutic installations and are all available to fellows in radiology.

Teaching fellows are expected to assist in the teaching of undergraduate students and will be given opportunity to teach independently in elective courses.

1. *University Hospital and Outpatient Department.*—Offers unusual clinical material of a chronic nature including especially gastrointestinal, chest, bone, and urological cases. Unique opportunity is afforded for pre-operative study of individual cases with operative checks. Post-mortem comparisons are available in an unusually high percentage of cases.

a. *Cancer Institute.*—This division of the University Hospital with its Outpatient Department offers a wide variety of material for the study of all types of tumors both from the diagnostic and therapeutic standpoint. It is fully equipped with the newest type of deep therapy machines and has a radium emanation plant.

b. *The Eustis Hospital.*—This division of the University Hospital offers an excellent opportunity for the study of orthopedic and pediatric cases.

2. *Students' Health Service.*—The close connection of the University Hospital with the Students' Health Service gives opportunity for diagnostic study of a valuable group of cases presenting especially acute conditions in young adults. The opportunity for diagnosis of pulmonary tuberculosis, in its incipency, for the observation of routine roentgenographic examinations of the chest, and for the study of gastrointestinal lesions in their earliest stages is especially good.

3. *Minneapolis General Hospital.*—This institution offers an immense

amount of material in both acute and chronic cases. An unusual opportunity for the study of fractures, acute pulmonary conditions, and cardiac diseases is presented.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- 101f,w,s. 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. Dr. Rigler, Dr. Wangenstein.
- 102f,w,s. X-Ray Conference. Weekly departmental meetings at the University and Minneapolis General hospitals at which the important cases seen in these two hospitals during the previous period are reviewed. Dr. Rigler, Dr. Ude, Dr. Lipschultz.
- 103f,w,s,su. Physical Therapy. Clinic in which the students have opportunity to participate in the practical application of physical therapy to patients. Dr. Stenstrom.
- 104s. Roentgen and Radium Therapy. Lectures on theory and practice of radium therapy. Dr. Stenstrom.
- 105f. Roentgen Rays, Light, and Radium. (See Biophysics 105f.) Dr. Stenstrom.
- 106w. Physical Therapy. Lectures on the theory and practice of the application of diathermy, visible and infrared light, and ultraviolet light. Dr. Stenstrom, Dr. Knapp.
- 107f,w,s. 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. Dr. Rigler, Dr. Watson.
- 108f,ws. 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. Dr. Rigler, Dr. McQuarrie.
- 170f,w,s. Problems in Biophysics. (See Biophysics 170.) Dr. Stenstrom.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 200f,w,s,su. Research in Roentgenology. Problems in Roentgen diagnosis. Dr. Rigler.
- 201f. Roentgen Diagnosis of Diseases of the Head and Upper Respiratory Tract. A special course covering the Roentgen diagnostic procedures and the Roentgen findings in the study of the head, including diseases of the skull, sinuses, mastoids, orbits, intracranial conditions, and in the study of the upper respiratory passages. Dr. Rigler.
- 202s. Roentgen Diagnosis in Pediatrics. A special course covering the Roentgen diagnostic procedures and the Roentgen findings in pediatric cases. Dr. Rigler.
- 205f,w,s,su. Research Related to Radiation Therapy. Dr. Stenstrom.
- 206f,w,s,su. Roentgenoscopy. The theory and practical application of roentgenoscopy particularly to diseases of the gastrointestinal tract, lungs, and heart. Dr. Rigler.

- 207f,w,s,su. Roentgen and Radium Therapy. Treatments of patients under supervision both with medium and high voltage machines and with radium. Problems in connection with these treatments will be thoroly discussed. Dr. Stenstrom.
- 208f,w,s. Radiology Seminar. Weekly presentations of research studies of reviews of the literature on subjects of importance in radiology. Dr. Rigler, Dr. Stenstrom.
- 209f,w,s,su. Roentgen Diagnosis. The theory and practical application of Roentgen diagnostic methods to medical cases in general. Dr. Rigler.
- 210f,w,s,su. 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. Dr. Rigler.
- 211w. Roentgen Diagnosis of Diseases of Gastrointestinal Tract. Dr. Morse.
- 212s. Roentgen Diagnosis in Obstetrics and Gynecology. Dr. Ude.
- 213f. Roentgen Diagnosis of Pulmonary Diseases. Dr. Hanson.
- 214w. Roentgen Diagnosis of Diseases of Bones and Joints. Dr. Rigler.
- 215s. Roentgen Diagnosis of Diseases of Gallbladder and Urinary Tract. Dr. Aurelius.

B. Courses Offered in the Mayo Foundation

Professors Harry H. Bowing, B.S., M.D., Arthur U. Desjardins, M.D., M.S. in Radiology, Byrd R. Kirklin, M.D.; Associate Professors John D. Camp, B.S., M.D., Eugene T. Leddy, B.A., M.D.; Assistant Professors Robert E. Fricke, B.A., M.D., Charles G. Sutherland, M.D.; Instructors Walter C. Popp, M.D., M.S. in Derm., Harry M. Weber, B.S., M.D.

All branches of work with the X ray and radium as applied to medicine are covered in the Mayo Foundation. The fundamental plan gives the graduate student an opportunity for an intimate observation of cases and practical experience in routine work. In addition, informal didactic instruction is given as occasion presents. Frequent seminars are held. The library of the clinic and that of the section are well supplied with texts and journals dealing with radiology. Free use of them is expected. Individual research is encouraged in any radiologic problem which especially interests the student.

M282f-w,w-s,s-su,f. Necropsy Service. (See Department of Pathology.)

M293f,w,s,su. At least three months in general roentgenologic technique. Practical experience in all varieties of roentgenologic apparatus including transformers, vacuum tubes, tables, films, intensifying screens, etc. This training in roentgenologic technique is intended to prepare the fellow to make roentgenograms in connection with his subsequent work. Unless the fellow proposes to take physics as his minor, he must also, during this period, become acquainted with the physics of the Roentgen ray. Dr. Camp, Dr. Kirklin, Dr. Sutherland, Dr. Weber.

M294f,w,s,su. At least eighteen months in applied roentgenologic diagnosis. The student will be given opportunity to become familiar with the roentgenography of the osseous system, chest, heart, lungs, and urinary

system, and with special techniques required in roentgenography of the accessory sinuses, mastoids, teeth, genitourinary tract, ventricles of the brain, and other special anatomical regions. Unusual facilities and material are at hand for the roentgenoscopy and roentgenography of the gastrointestinal tract. Thoro training is obtainable in the reading of films and screen images, the recognition of normal and abnormal conditions, the Roentgen signs of disease, both direct and indirect, roentgenologic diagnosis, the correlation of plate and screen findings, and the correlation of clinical and roentgenologic findings. Cholecystographic interpretation is given special attention. Seminar. During this period of eighteen months fellows have brief services in rotation with the Departments of Urology, Obstetrics and Gynecology, Neurology and Psychiatry, and Dentistry. Seminar. Dr. Camp, Dr. Kirklin, Dr. Sutherland, Dr. Weber.

M295f,w,s,su. At least six months in Roentgen therapy. Fellows have the privilege of examining patients affected with the various benign and malignant diseases to which Roentgen treatment is applicable, and of observing its effects, both early and late. Techniques suitable for the various conditions are taught by practical demonstration. Instruction is given in the prevention of untoward effects from therapeutic applications of the Roentgen ray and the avoidance of danger from high tension currents. Seminar. Dr. Desjardins, Dr. Leddy, Dr. Popp.

M296f,w,s,su. At least three months in radium therapy. Techniques are demonstrated in the preparation and application of radium tubes, needles, and plaques for therapeutic use, with methods of protection from injury. A large number of patients and an adequate supply of radium permit a practical exhibition of its application in general surgery, gynecology, ophthalmology, internal medicine, and diseases of the ductless glands, showing the dosage, biologic effects, and reactions. Seminar. Dr. Bowling, Dr. Fricke.

In addition to the above, students majoring in radiology may take work in biophysics and experimental physiology. For details, see these departments.

SCIENCE, HISTORY OF

Richard E. Scammon, Ph.D., LL.D., Distinguished Professor in the Graduate School.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

190f-191w-192s. History of Science. Course in the social history of science, open to qualified graduate and Senior College students in any field of scientific or historical specialization. Conferences, readings, and occasional lectures. This course may count as major or minor on approval of the student's adviser in the Graduate School. Credits arranged. Consult Professor Scammon before registering.

SURGERY

(Including Divisions of General Surgery, Neurosurgery, Orthopedic Surgery, Urology, Proctology, and Anesthesia)

GENERAL SURGERY

A. Courses Offered at the Medical School

Professors Owen H. Wangensteen, M.D., Ph.D., Head; Wallace H. Cole, M.D., Arthur C. Strachauer, M.D., Arthur A. Zierold, M.D., Ph.D.; Clinical Professors J. Frank Corbett, M.D., Harry P. Ritchie, Ph.B., M.D.; Associate Professors Charles D. Creevy, M.D., Ph.D., William T. Peyton, M.D., Ph.D.; Clinical Associate Professors Walter A. Fansler, M.A., M.D., Frederic E. B. Foley, Ph.B., M.D., Gilbert J. Thomas, M.D.; Assistant Professors Orwood J. Campbell, M.D., Ph.D., Harry B. Zimmerman, M.D.

Graduate work in surgery in the Medical School is designed to offer superior training to a limited number of fellows in three or more years of residence. The practical and scientific aspects of a well-rounded surgical course are equally emphasized.

The prospective fellow must be able to qualify as a candidate for the Ph.D. degree so far as his preliminary education is concerned. (See requirements for higher degrees.)

The fundamental laboratories of the Medical School offer numerous graduate courses closely related to surgery. (See statements of Anatomy, Pathology, Physiology, Physiological Chemistry, and Bacteriology.) Opportunity for special investigative and research work is found in these departments. The minor subjects must be taken in one of the above departments; anatomy or pathology is usually selected by the fellow. The proximity of the medical buildings and arrangement of courses afford opportunity for coordination of clinical and laboratory work which is highly desirable.

The courses offered by the Department of Surgery consist of animal, experimental, and cadaver surgery, together with work in the hospital and outpatient departments in surgical diagnosis, operative surgery, and some of the surgical specialties.

Unexcelled opportunities for technical and experimental work under aseptic conditions comparable to a first-class operating room are offered in the laboratories of animal and experimental surgery. In these laboratories the fellow conducts his investigative work for his thesis.

The University Hospital fellowship provides a house surgeonship in the University Hospital, with or without residence. The fellow aids the surgical staff in diagnosis and in the preoperative and postoperative care of patients. He helps to direct and supervise the work of the interns, and after his first year assists in the bedside teaching of the surgical clerks. He acts as first assistant in operations performed by the general surgical staff. As soon as he proves himself capable, the more simple major operations are delegated to him to perform, with the surgeon acting as first assistant. Later he is per-

mitted to operate under the supervision of the surgeon, and finally, when he has demonstrated his ability, he operates independently. Increasingly difficult cases are assigned as his ability warrants. Supervision is always given until the staff surgeon is satisfied of the fellow's ability to operate independently.

A Medical School surgical fellowship is also offered with assignment and residence at the Minneapolis General Hospital, which has a total of 846 beds.

The Memorial Cancer Institute (a gift from the Citizens' Aid Society of Minneapolis), provides special facilities for clinical instruction in malignancy. (For special work in this field see announcements in Radiology and Biophysics.)

The Eustis Hospital has made possible special graduate instruction in orthopedics. Training in this field is available to the surgical fellows as well; six months or more of the fellow's surgical assignment is spent on this service. Adequate provision is made for surgical fellows desiring to specialize in the Orthopedic Division.

Regular graduate students who are not fellows are offered combination courses leading to qualification for advanced degrees. The University Hospital fellowships are limited to candidates for advanced degrees.

COURSES FOR UNDERGRADUATE AND GRADUATE STUDENTS

- 101f,w,s. Advanced Minor Surgery. The student is required to assist in the outpatient surgical clinic, and in this connection makes a special study of the diagnosis and treatment of selected cases. University Hospital surgical staff.
- 102f,w,s. Operative Surgery on the Cadaver. Technique of abdominal incision and closure; of bowel suturing, appendix removal, kidney exploration, nephrotomy, tracheotomy, amputations, ligations, etc. Graduate students act as laboratory assistants and may work out upon the cadaver various independent problems in emergency surgery. University Hospital surgical staff.
- 105f,w,s. Proctoscopy and Sigmoidoscopy. The treatment and diagnosis of the pathological conditions found in the lower bowel, including minor surgical operations. University Hospital surgical staff.
- 121f,w,s. Advanced Minor Surgery. The student is required to assist in the outpatient surgical clinic, and in this connection makes a special study of the diagnosis and treatment of selected cases. Minneapolis General Hospital surgical staff.
- 125f,w,s. Proctoscopy and Sigmoidoscopy. The treatment and diagnosis of the pathological conditions found in the lower bowel, including minor surgical operations. Minneapolis General Hospital surgical staff.
- 135f,w,s. Tumor Clinic. A combined clinical and pathological consideration of tumors. Insofar as available material permits, a systematic presentation of the manifestations and effects of malignant tumors which come in the province of general surgery and its divisions will be reviewed. University Hospital surgical staff.
- 136f,w,s. Surgical Ward Conference. A weekly exercise in which cases presenting interesting problems are presented by the student. University Hospital surgical staff.

137f,w,s. Roentgenological-Surgical Conference. A weekly exercise in which the films of all surgical patients presenting interesting Roentgen findings are reviewed. Staffs of the Departments of Radiology and Surgery.

COURSES PRIMARILY FOR GRADUATE STUDENTS

- 205f-206w-207s. Surgical Diagnosis. In this course the graduate student assists in the practical instruction of the clinical clerks and interns in the University Hospital, and makes a special study of problems in surgical diagnosis on patients in the outpatient department as well as in the wards. University Hospital. Dr. Wangenstein, Dr. Cole, Dr. H. P. Ritchie, Dr. Creevy, Dr. Peyton, Dr. Evans, Dr. R. T. Knight, Dr. Hart.
- 208f-209w-210s. Surgical Service. The graduate student acts as house surgeon and in connection with the service is required to make a special study of the patients, preparing them for clinics and observing them after operations. University Hospital. Dr. Wangenstein, Dr. Cole, Dr. H. P. Ritchie, Dr. Creevy, Dr. Peyton, Dr. Evans, Dr. R. T. Knight.
- 211f-212w-213s. Operative Surgery. In this course the surgical fellow acts as first assistant at all operations by the surgical staff in the University Hospital. When properly qualified, the fellow will be permitted to operate, beginning with simpler surgical procedures. University Hospital. Dr. Wangenstein, Dr. Cole, Dr. H. P. Ritchie, Dr. Creevy, Dr. Peyton, Dr. Evans, Dr. R. T. Knight.
- 216f,w,s. Surgical Research. Properly qualified students may undertake original investigation of problems in either experimental or clinical surgery. University Hospital surgical staff.
- 217f,w,s. Surgical Seminar. Conference for reports on surgical literature with presentation and discussion of specially interesting cases and problems as well as research work by members of the surgical staff. University Hospital surgical staff.
- 225f-226w-227s. Surgical Diagnosis. In this course the graduate student assists in the practical instruction of the clinical clerks and interns in the Minneapolis General Hospital, and makes a special study of problems in surgical diagnosis on patients in the outpatient department as well as in the wards. Minneapolis General Hospital. Dr. Zierold, Dr. Fansler, Dr. Campbell, Dr. Robitshek.
- 228f-229w-230s. Surgical Service. The graduate student acts as house surgeon and in connection with the service is required to make a special study of the patients, preparing them for clinics and observing them after operation. Minneapolis General Hospital. Dr. Zierold, Dr. Fansler, Dr. Campbell, Dr. Robitshek.
- 231f-232w-233s. Operative Surgery. In this course the surgical fellow acts as first assistant at all operations by the surgical staff in the Minneapolis General Hospital. When properly qualified, the fellow will be permitted to operate, beginning with simpler surgical procedures. Minneapolis General Hospital. Dr. Zierold, Dr. Fansler, Dr. Campbell, Dr. Robitshek.

- 236f,w,s. Surgical Research. Properly qualified students may undertake original investigation of problems in either experimental or clinical surgery. Minneapolis General Hospital. Dr. Zierold, Dr. Fansler, Dr. Campbell, Dr. Robitshek.
- 237f,w,s. Surgical Seminar. Conference for reports on surgical literature with presentation and discussion of specially interesting cases and problems as well as research work by members of the surgical staff. Minneapolis General Hospital surgical staff.

B. Courses Offered in the Mayo Foundation

Professors Donald C. Balfour, M.D., Hugh Cabot, B.A., M.D., LL.D., Stuart W. Harrington, M.D., M.S. in Surg., John S. Lundy, B.A., M.D., Frank C. Mann, M.D., M.A., James C. Masson, M.D., John deJ. Pemberton, M.D., M.S. in Surg., LL.D., Waltman Walters, M.D., M.S. in Surg.; Associate Professors Virgil S. Counseller, M.D., M.S. in Surg., Claude F. Dixon, M.D., M.S. in Surg.; Assistant Professors Howard K. Gray, M.D., M.S. in Surg., Charles W. Mayo, M.D., M.S. in Surg., James T. Priestley, M.D., M.S. in Exp. Surg., Ph.D. in Surg., Fred L. Smith, B.A., M.D.; Instructor John M. Waugh, M.D., M.S. in Surg.

Dr. William J. Mayo, being a regent of the University, is not a member of the instructional staff. His services in instruction and conference, however, are available.

The opportunities for preparation in surgery in the Mayo Foundation are principally in the field of surgical pathology, in general and surgical diagnosis, and in operative and experimental surgery.

Fellows majoring in surgery usually include in their work three months in postoperative care of ambulatory patients; six months in surgical pathology; and at least a year in general diagnosis. This general diagnostic work is divided into services of six months each. Fellows select the diagnostic sections in which they desire to work and their requests are followed so far as arrangements of the schedule will permit. The work in the minor field, pathology, pathologic anatomy, and physiology, and at least one year of diagnostic work should be completed before the fellow begins his operative service.

In their operative service fellows act as second assistants for a period of six months to one year. The service also includes postoperative care of all patients in the operative service in which the fellow is on duty. During this service, the fellow works in various rooms as second assistant and has occasional opportunity to act as first assistant. All second assistants are residents in the hospitals in which they are on operative service.

Fellows who are considered best qualified are appointed first assistants for a period of one or two years. This service may begin during the third year of residence. There are seventeen such first assistantships available. There are also two positions as residents open to competent fellows. Residents act as alternate first assistants.

Operative service for fellows in general surgery is given at St. Marys', Colonial, and Kahler hospitals.

The Colonial Hospital of 325 beds is utilized for general surgery, including emergency surgery, and a large part of the surgery of certain specialists: the thorax (Dr. Harrington, Dr. Gray), and urology (Dr. Cabot, Dr. Walters, Dr. Counsellor, Dr. Priestley).

St. Mary's Hospital contains 600 beds. 400 of which are available for general surgery. There is also a special service in gynecology (Dr. Masson, Dr. Counsellor, Dr. Waugh).

The Kahler Hospital contains 125 beds. Special surgical services in the thyroid (Dr. Pemberton, Dr. Dixon) and the colon (Dr. Pemberton, Dr. Dixon, Dr. C. W. Mayo) are provided.

M255f-w,w-s,s-su,f. General Medical and Surgical Diagnosis. (See Department of Medicine.)

M256f,w,s,su. Medical Hospital Residence. (See Department of Medicine.)

M284f-w,w-s,s-su,f. Surgical and Fresh Tissue Pathology. (See Department of Pathology.)

M297f,w,s,su. Postoperative Care of Patients. Treatment of complications, surgical and medical. Dr. Smith.

M298f,w,s,su. Intravenous Medication. The work in intravenous therapy offers a large field for the study of problems related to blood physiology, the blood dyscrasias, and the causes and prevention of reactions following such therapy. Dr. Lundy.

M299f,w,s,su. Regional Anesthesia. The technique of field block and nerve block procedures will first be practiced upon the cadaver while the student observes the performance of the work on patients. During the latter half of the term opportunity will be provided for the student himself to perform these anesthetic procedures as part of the preoperative preparation on patients. Dr. Lundy.

M300f,w,s,su. Surgical Technique. The purpose of this course is to develop surgical technique on animals. The fellows are paired and one operates while the other assists in performing the classical operations adaptable to experimental surgery. Open only to fellows in surgery. Dr. Mann, Dr. Bollman.

M301f,w,s,su. Operative Surgery. Second assistantship in operating rooms; substitute service as first assistant. Residence. Seminar. Dr. Balfour, Dr. Harrington, Dr. Masson, Dr. Pemberton, Dr. Walters, Dr. Counsellor, Dr. Dixon, Dr. Gray, Dr. C. W. Mayo, Dr. Priestley, Dr. Waugh.

M302f,w,s,su. Surgery of the Genitourinary Organs. Operative techniques; study of special problems involved. Residence. Seminar. Dr. Cabot, Dr. Walters, Dr. Counsellor.

In addition to the above, fellows majoring in surgery may take work in necropsy service, experimental physiology, Roentgen therapy, radium therapy, urology, orthopedic surgery, neurosurgery, and proctology. For details, see these departments.

NEUROSURGERY

B. Courses Offered in the Mayo Foundation

Professors Alfred W. Adson, M.D., M.S. in Surg., M.A., Winchell McK. Craig, B.A., M.D., M.S. in Surg.; Assistant Professor J. Grafton Love, M.D., M.S. in Surg.

Preparation for neurosurgery in the Mayo Foundation is made in the Departments of Pathology, Neurology and Psychiatry, and General Surgery.

111f,su. Human Neurology. Dr. Rasmussen. (See Anatomy 111.)

M261f,w,s,su. Neuropathology. (See Division of Neurology and Psychiatry.)

M262f-w,w-s,s-su,su-f. Diagnosis in Neurology and Psychiatry. (See Division of Neurology and Psychiatry.)

M283f-w,w-s,s-su,su-f. Necropsy Service. (See Department of Pathology.)

M303f,w,s,su. Surgery of the Nervous System. Operative technique and study of special problems involved. Residence. Seminar. Dr. Adson, Dr. Craig, Dr. Love.

In addition to the above, fellows in neurosurgery may take work in general pathology, experimental physiology, neuro-ophthalmology, and general surgery. For details, see these departments.

ORTHOPEDIC SURGERY

A. Courses Offered at the Medical School

Professor Wallace H. Cole, M.D.

The surgical fellow has an opportunity to observe and study the patients in the Outpatient Department and in the wards. Dr. Cole, Dr. Evans, Dr. Hart.

B. Courses Offered in the Mayo Foundation

Professors Ralph K. Ghormley, M.D., Melvin S. Henderson, M.D., Henry W. Meyerding, M.D., M.S. in Orth. Surg.; Instructor Harry B. Macey, M.D.

Orthopedic surgery in the Mayo Foundation embraces not only the deformities of childhood but practically all deformities of the extremities and the spine in the adult. Fractures, recent and old; osteomyelitis, acute and chronic; bone tumors, and so forth, are taken care of in the orthopedic service. In addition all the usual congenital deformities such as clubfeet, dislocated hips, torticollis, and so forth are seen on this service. The surgeon who is to cope successfully with such a broad field of surgery must have a sound general surgical training. Residences are available in St. Mary's Hospital and the Colonial Hospital. Here the hospital care of orthopedic patients is carried on. All emergency cases such as recent and compound fractures, acute osteomyelitis, etc., are also cared for. Services

are confined to orthopedic diagnosis, treatment of nonoperative patients, manufacture and fitting of braces, and outpatient and postoperative service.

Ten three-year fellowships are available for fellows showing special adaptability for orthopedic surgery. Such fellows will have one year in orthopedic diagnosis, at least one year in orthopedic surgery, service in specialties closely allied to orthopedic surgery, and a minor either in pathology, anatomy, or neurology. Ample opportunity will be given the men majoring in orthopedic surgery for first assistantship in the operating room and in the office. Ample opportunity is given for the study of the manufacture and use of orthopedic appliances.

A department of physical medicine is associated with the Department of Orthopedic Surgery. Fellows majoring in orthopedic surgery have opportunity to work therein.

M284f-w,w-s,s-su,su-f. Surgical and Fresh Tissue Pathology. (See Department of Pathology.)

M304f,w,s,su. Orthopedic Diagnosis. History taking and physical examination of orthopedic cases. Study of braces, material and construction, measurements and fitting; application and use of plaster of Paris; interpretation of radiograms of orthopedic cases; care of nonsurgical and postoperative cases. Seminar. Dr. Ghormley, Dr. Henderson, Dr. Meyerding, Dr. Macey.

M305f,w,s,su. Orthopedic Surgery. One year in service is offered to fellows majoring in orthopedic surgery. Seminar. Dr. Ghormley, Dr. Henderson, Dr. Meyerding, Dr. Macey.

In addition to the above, students majoring in orthopedic surgery may take work in necropsy service, experimental physiology, neurology, and physical medicine. For details, see these departments.

UROLOGY

A. Courses Offered at the Medical School

Associate Professor C. Donald Creevy, M.D., Ph.D.

An assignment upon which the surgical fellow participates in the diagnosis and management of diseases of the genitourinary organs. Dr. Creevy, Dr. Wright.

B. Courses Offered in the Mayo Foundation

Professor William F. Braasch, B.S., M.D.; Associate Professors John L. Crenshaw, M.D., Gershom J. Thompson, M.D., M.S. in Urol.; Assistant Professor Louis G. Stuhler, M.D.; Instructors Edward N. Cook, B.A., M.D., M.S. in Urol., John L. Emmett, M.D., M.S. in Urol.

The major training in urology extends over a period of three years. This includes one and one-half years devoted to the diagnosis and treatment of diseases involving the urinary tract, six months to one year in operative

surgery (including transurethral surgery), and at least six months in pathology. The work is designed to provide a thoro experience in the diagnosis and treatment of diseases involving the urinary tract.

Urologic diagnosis and treatment, including cystoscopy, urethroscopy, pyeloscopy, urography, fulguration, diathermy, removal of foreign bodies, lithotripsy, ureteral manipulation, pelvic lavage, radium treatment, and so forth, are conducted daily. The fellow is given an opportunity personally to examine patients and familiarize himself with the diagnosis of a wide range of diseases affecting the urinary tract. This service extends over a period of twelve months, which is divided into junior and senior services.

The diagnostic experience is enlarged by experience as resident in the urologic service of the Colonial Hospital. In this service the resident has an opportunity to study the preoperative and postoperative treatment of urologic conditions, as well as the clinical study and urologic diagnosis of patients under observation in the Colonial Hospital. He also acts as assistant in the field of transurethral surgery.

The surgical training consists of work as second assistant in general and urologic surgery. Opportunity is given to observe a large number of patients operated on for diseases involving the urinary tract and associated organs. Additional opportunity is offered to assist in operations for general surgical conditions, and particularly general abdominal surgery.

Urologic diagnosis and treatment, including cystoscopy, urethroscopy, pyeloscopy, urography (both retrograde and excretory), pelvic lavage, and so forth, are conducted daily. There is also an extensive service in transurethral surgery, including electrocoagulation and insertion of radium in neoplasms of the bladder and urethra, removal of foreign bodies from bladder and urethra, lithotripsy, dilatation of strictures of the urethra and ureter, incision of the lower quarter, manipulation of ureteral stone, and transurethral prostatic resection.

A urologic service, which involves the diagnosis and treatment of inflammatory infections of the urethra, prostate, seminal vesicles, and epididymis is available. Opportunity is given for the careful study and treatment of urethritis and infection in the adjacent genitourinary tract. Each fellow is expected to spend at least six months on this service.

Special attention is given to urography, including pyelography, ureterography, cystography, and urethrography.

M283f-w,w-s,s-su,su-f. Necropsy Service. (See Department of Pathology.)

M302f,w,s,su. Surgery of the Genitourinary Organs. (See Department of Surgery.)

M306f,w,s,su. Urologic Diagnosis. Cystoscopic examination. Urography; both retrograde and intravenous uroscopy. History-taking in diseases of the genitourinary tract. Seminar. Dr. Braasch, Dr. Crenshaw, Dr. Thompson, Dr. Cook, Dr. Emmett.

M307f,w,s,su. Special Urologic Treatment. Including the study and treatment of acute and chronic infections of the genitourinary tract. Dr. Stuhler, Dr. Cook.

M308f,w,s,su. Transurethral Surgery. Including recent development in transurethral prostatic resection, manipulation of stones in the ureter, litholapaxy, sphincterotomy, intravesical diathermy, etc. Seminar. Dr. Thompson, Dr. Cook, Dr. Emmett.

In addition to the above, fellows majoring in urology may take work in biochemistry, surgical pathology, clinical pathology, experimental physiology, roentgenology, and dermatology. For details, see these departments.

PROCTOLOGY

B. Courses Offered in the Mayo Foundation

Professor Louis A. Buie, B.A., M.D.; Associate Professor Newton D. Smith, B.S., M.D.

The section on proctology in the Mayo Foundation offers opportunities for the study of diseases of the lower intestinal tract. The patients come to the section by reference from other departments. They have usually been studied from other medical angles so that the opportunity to study the relationships and background of the special field, as well as the immediate diagnostic problems, is good. The major service in proctology extends over a period of three to four years, and includes a minimum of six months in a minor, usually pathology, approximately two to three quarters in general medical and surgical diagnosis with special reference to diseases of the intestines, three months in regional anesthesia with special reference to sacral anesthesia, in diagnostic roentgenology, in radium treatment of malignant and other conditions, and six to eight quarters in the diagnosis and surgical and other treatment of diseases involving the lower intestinal tract.

M255f-w,w-s,s-su,su-f. General Medical and Surgical Diagnosis. (See Department of Medicine.)

M256f,w,s,su. Medical Hospital Residence. Dr. Logan, Dr. Bargaen. (See Department of Medicine.)

M284f-w,w-s,s-su,su-f. Surgical and Fresh Tissue Pathology. (See Department of Pathology.)

M309f,w,s,su. Proctology. Dr. Buie, Dr. Smith.

In addition to the above, fellows majoring in proctology may take work in experimental physiology, roentgenology, and regional anesthesia. For details, see these departments.

ANESTHESIA

B. Courses Offered in the Mayo Foundation

Professor John S. Lundy, B.A., M.D.; Instructor Edward B. Tuohy, M.D., M.S. in Anes.

The following courses are recommended for fellows in anesthesia:

153f,154w,155s. Anatomy. Topographic anatomy. Dr. Jackson. (See Anatomy 129-130.)

- M255f-w,w-s,s-su. General Medical and Surgical Diagnosis. (See Department of Medicine.)
- M290f-w,s-su,su-f. Research Work on Selected Problems in Experimental Physiology.
- M291f,w,s,su. Biochemistry. (See Department of Physiology and Physiologic (Bio) Chemistry.)
- M310f,w,s,su. Regional and General Anesthesia. Dr. Lundy.

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The Bulletin of the University
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A Radio Course

in

Music Appreciation

By Burton Paulu



THE GENERAL EXTENSION DIVISION

The Minnesota School of the Air

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September 29, 1938 to June 15, 1939

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General Extension Division—RICHARD R. PRICE, Director

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Minnesota School of the Air

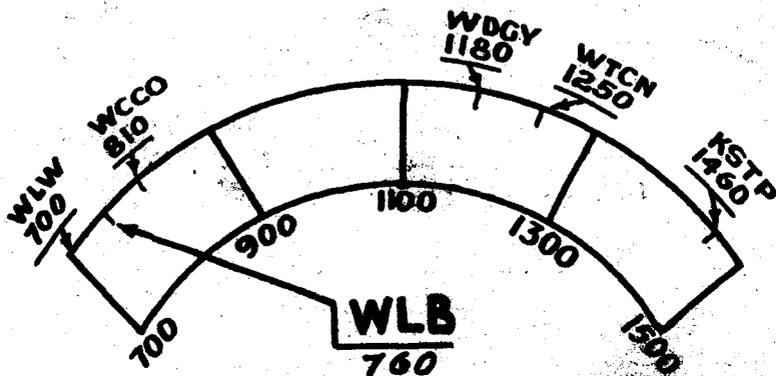
Announcement

THE University of Minnesota takes pleasure in announcing the Radio Course in Music Appreciation, which will for the eighth consecutive year be broadcast by the University Radio Station WLB. These lessons will be presented on Thursday mornings from 11:00 to 11:30, beginning September 29, 1938, and continuing for thirty-eight weeks until June 15, 1939. Station WLB now broadcasts on 760 kilocycles. The use of this new frequency, with an increase of power to 5000 watts, makes it possible for listeners in most of Minnesota to hear WLB without difficulty, and also places large portions of Iowa and Wisconsin, adjoining Minnesota, well within the service area of WLB. The location of WLB on the dial of your radio is indicated on the diagram at the bottom of this page.

This Music Appreciation series is one of the programs comprising the Minnesota School of the Air. Some of the programs in the Minnesota School of the Air have been prepared primarily for reception in school classrooms. Other School of the Air broadcasts are intended primarily for the general public. The Music Appreciation series is designed for adult listeners, altho some of its features may be easily adapted for use in high school classes.

Burton Paulu, manager of WLB, who has prepared the lessons since the inception of the programs in 1931, will again conduct the broadcasts. During his ten years of broadcasting, Mr. Paulu has contributed to the musical education and enjoyment of a great many people. The course outlined for the season of 1938 and 1939 promises to be the best of the Music Appreciation programs he has broadcast.

Copies of this bulletin, which is designed to assist in preparing for and following the broadcasts, will be sent free as long as the edition lasts, to all who ask for it.



RADIO COURSE IN MUSIC APPRECIATION

INTRODUCTION

This Radio Course in Music Appreciation has been designed to assist the average person in the enjoyment of fine music. The broadcasts consist, in the main, of recordings of outstanding musical compositions supplemented by nontechnical comments, designed, not to give information for its own sake, but to increase the listener's enjoyment of this music and of all fine music. This bulletin contains a set of program notes for the music to be played during the broadcasts, together with some other material relative to these programs.

The thirty-eight lessons of this course are the development of a very simple theory: it is the belief of the organizer, that, in order to understand and enjoy fine music, a listener must master a few elementary principles and learn a number of simple facts, and then apply these during frequent hearings of fine compositions. The enjoyment of such popular and universal amusements as reading, conversing, dancing, card playing, and swimming depends upon the acquisition of some elementary skills; similarly the enjoyment of fine music requires the mastery of a few basic principles. Furthermore, just as the development of proficiency in the popular amusements mentioned above requires repeated practice, so does the enjoyment of a great musical work come only after a number of hearings. True appreciation depends largely upon familiarity, and a satisfactory stage of familiarity is attained much more quickly by those who know how to listen.

In the eight years that this series of programs has been broadcast, several fundamental procedures have been consistently followed: (1) Almost every important composition used on the broadcasts is played twice during the season. By repeating a few significant works by outstanding composers, instead of giving single performances of many compositions of varying merit, these worth-while works are impressed upon the listener. Last year, the policy of repeating on other WLB broadcasts the music played during this Music Appreciation series was followed, and during the present season this will be continued; not only will the music appreciation selections be repeated, but other works of similar nature will be presented in connection with them. (2) The selections played are to be found on the programs of the world's best orchestras and artists; the broadcasts purposely omit the very familiar pieces which great musicians never perform—except, perhaps, as encores—in order to give attention to music which first-rank performers play without hesitation on their best programs. To the uninitiated some of these pieces may appear formidable at first, but this impression will disappear when an acquaintance with the music has been made. (3) Representative music of all types is chosen, ranging from vocal solos to works for symphony orchestra, and from an early example of program music composed in 1720 (*The Combat Between David and Goliath*, by Johann Kuhnau) to the impressionistic *Preludes* of Debussy, written in 1910. (4) The recordings used are made by world famous artists, so that listeners have an opportunity to get acquainted with the playing of the outstanding performers of the day.

THE USE OF THESE PROGRAMS IN CLASSROOMS

The Minnesota School of the Air, into which are grouped most of the formally organized instructional broadcasts presented by WLB, includes programs on a number of different levels, which are designed for different purposes. On the one hand are a group of broadcasts planned especially for reception in classrooms, which are intended to supplement the classroom work in a variety of subjects and on a number of grade levels.

Altho these programs in many cases will be interesting to adult listeners also, they have been planned especially for classroom use. At the same time, the School of the Air offers organized instructional programs for the general public, altho a number of these are adaptable in part, at least, to classroom use. The Music Appreciation series falls into this category. When first presented, during the year 1931-32, this course was intended primarily for use in school rooms, but the tremendous interest displayed by listeners above school age has constantly influenced the course in their favor.

Some of the programs in this series will be found excellently suited for class reception in high schools. The lessons on the instruments of the orchestra, with illustrations presented on the actual instruments themselves by members of the Minneapolis Symphony Orchestra, would be broadcast exactly the same were they planned exclusively for schools. Likewise, the first unit on "The Language of Music," will be found suitable for music classes on the higher levels. The programs of German vocal music (Lessons 24, 26, 27, and 28) are recommended as supplementary work for advanced German classes; with the texts available in this bulletin for study, they could serve as examples of German literature and pronunciation. It is therefore observed that despite the appeal of these programs to adults, they also offer a great deal to school listeners, a fact which is attested by their endorsement for school use by both the Radio Committee of the Minnesota Education Association and the State Department of Education.

When these programs are used in schools, the pupils should have the benefit of class discussion before they hear the broadcasts. The nature of this discussion will vary tremendously from group to group, depending largely on the amount of music appreciation work and other musical training the pupils have had. In the case of the lessons on musical form (The Language of Music), for instance, the teacher should present to the class some information about the forms to be illustrated on the broadcasts, using examples if any are available. For the lessons on orchestral instruments, the best preparation will be a demonstration of the tone quality of the various instruments, either through the use of records or the instruments themselves. When the themes for the pieces played are available, either from this bulletin or elsewhere, it would be an excellent plan to play them over until they become familiar. When groups of students are to hear any of the vocal programs in this series, additional copies of the bulletin should be secured so that each student may have the texts before him. If the programs of vocal music with German texts are used in connection with German classes, the pupils should prepare by studying the vocabulary of the selections, so that during the programs they can concentrate on the music. It is difficult to make suggestions more specific than this, since conditions are bound to vary so greatly from school to school.

THE LESSONS

THE LANGUAGE OF MUSIC: MUSICAL FORM

Lesson 1. How Much Do You Know About Music? September 29, 1938

Introduction: The six broadcasts comprising the first unit in this series will deal with the ideas and the language of music. During these programs we shall examine the melodies upon which some compositions are based, and shall learn a few interesting things about the transformations these themes undergo. Our approach is of the most practical nature imaginable: we shall be examining music with this all-important question in mind: "What is the tune?"

In the last analysis, music must be considered a language by itself. Music appreciation courses are inclined to emphasize every aspect of the music except the music! We are told about composers' lives, about the circumstances under which various pieces were

written and performed, and about the stories which some compositions tell. In the course of this procedure, the listener is apt to forget that after all, music is, principally, just music. It has its own ideas (musical themes or melodies), and these are discussed (or, to use the musicians' term—developed) during the compositions in which they occur, just as verbally stated ideas are discussed in the course of a talk, essay, or novel. The language of music is not difficult to understand if one puts aside technical terminology and considers a few simple aspects of the music itself.

The first broadcast will be a discussion of some of the things which all listeners know about the construction of music. For example, a man may not know that compositions often end with chords progressing from the dominant to the tonic; but he probably expects the one to follow the other, when he hears them, even tho he may not know the technical terms applied to such progressions. There are many other usages in melody writing, harmony, and instrumentation, which have been very definitely impressed upon us, and this program will illustrate some of these things.

Records: Musical examples will be selected from any material available which will illustrate the points discussed.

Lesson 2. A Composition Based on One Theme: the Theme and Variations.

October 6, 1938

Introduction: The second broadcast will explain how a long composition may be based entirely on one short theme. The selection to be played—the second movement of the Tchaikowsky *Trio in A Minor*—consists of a set of variations on a theme.

Information about the trio is given on pages 13 to 15. The program notes explain the meaning of the term, "theme and variations," and also quote the theme.

Records: Tchaikowsky: The second movement from the *Trio in A Minor*, Opus 50, ("To the Memory of a Great Artist"), played by Hephzibah Menuhin (piano), Yehudi Menuhin (violin), and Maurice Eisenberg (cello).

Lesson 3. Variations on a Theme: The Passacaglia. October 13, 1938

Introduction: An interesting form which the theme and variations sometimes take, is the passacaglia (or chaconne). On this program we shall hear one of the most famous of passacaglias—the last movement of the Brahms *Fourth Symphony*. Information about the *Symphony* will be found on pages 31 to 34.

Records: Brahms: The fourth movement from the *Symphony No. 4 in E Minor*, Opus 98, played by the British Broadcasting Corporation *Symphony Orchestra*, conducted by Bruno Walter.

Lesson 4. Improvisation on Familiar Themes. October 20, 1938

Introduction: To be able to understand the treatment which composers give their themes, it is necessary to be prepared in two respects: (1) the listener must know the themes upon which the music is based; and (2) he must be familiar with the general nature of the transformations which themes undergo. It usually happens that the best examples of musical development are found in the greatest compositions, the themes of which in many cases are not at all familiar to the average listener. Therefore, even tho he may want to, the listener has a very poor opportunity to find out just what musical development is like. Dr. Francis Richter, the blind organist and pianist, who has a large radio following in Minnesota and the surrounding states, will appear as guest performer on this program, and will improvise in various ways on themes which are familiar to everyone; thus the listener may concentrate on the developments alone, without being inconvenienced through the use of themes which are unfamiliar to him. By approaching the problem of thematic development in this way, the listener will be better prepared on later broadcasts, to follow the themes in compositions with which he is not familiar.

Lesson 5. A Composition Based on Two Themes: *Les Préludes*, by Liszt.

October 27, 1938

Introduction: This program will present Liszt's popular symphonic poem, *Les Préludes*. The discussion during the broadcast will stress the thematic development occurring in the composition; a subsequent broadcast (Lesson 30) will take up the program (story) which the music tells. Program notes are given on pages 25 to 27.

Records: Liszt: *Les Préludes*, played by the Philadelphia Symphony Orchestra, conducted by Eugene Ormandy.

Lesson 6. The Sonata Form. November 3, 1938

Program Notes: The programs in this series thus far have illustrated in a general way the transformations which musical themes undergo. Altho the Tchaikowsky movement was a theme and variations, and the Brahms excerpt a passacaglia, the emphasis during those two programs was on the general principles of thematic treatment, and not on the theme and variations and the passacaglia as such. To conclude this unit of programs on the language of music, we shall devote a broadcast to one form often encountered in instrumental compositions—the sonata form.

The sonata form is one of the most significant instrumental forms, and the principal sections of much of the world's finest music have followed this pattern. Any composition in the sonata form may be divided into three sections; the *exposition*, in which the two main themes of the movement are presented; the *development*, in which these themes—and perhaps some others—are played in many different ways, or as the musicians say, are "developed"; and the *recapitulation*, which is a repetition of the first section or exposition, altho with various changes so that it is never exactly like the opening section. In many cases the recapitulation is followed by a *coda*, a sort of epilog used to bring the movement to a better conclusion. A composer is free to write any music he wishes in the sonata form, and often a composition such as an overture or other single movement work will be constructed after this pattern, but its most famous use is in the opening movements of cyclical works—compositions such as sonatas, concertos, symphonies, or chamber music works. However, a musician may write a first movement in some other form, or may cast as many other movements of a piece in the sonata form as he pleases. The last movement of a work is often in sonata form, and the first one almost always is, altho the composer is free to alter either the form of his movements, or to take liberties within the forms he employs.

Program notes on the Brahms symphony are given on pages 31 to 34. The discussion of the first movement, which includes quotations from the principal themes, should be carefully examined in connection with this broadcast.

Records: Brahms: The first movement from the *Symphony No. 4 in E Minor*, Opus 98, played by the British Broadcasting Corporation Symphony Orchestra, conducted by Bruno Walter.

THE INSTRUMENTS OF THE SYMPHONY ORCHESTRA

Lesson 7. The Stringed Instruments. November 10, 1938

Introduction: No music appreciation course would be complete unless it presented information on the media of performance—the voices and the instruments which sing and play the music we hear. Later programs in this series will illustrate the types of voices; the next seven broadcasts will be devoted to the instruments used in the playing of serious music. They are included in recognition of the fact that the attainment of a reasonable degree of familiarity with instruments will result in a considerable increase in the pleasure experienced while listening to music. These are programs for the music lover, not the professional music student. Their goal is the aural recognition of the common instruments; details as to the construction and methods of playing will not be discussed.

Program Notes: This lesson is devoted to the instruments comprising the string section of the orchestra: the violin, the viola, the cello (strictly the violoncello), and the double

bass (also called the string bass and the bass viol.) Taken together as the string section, these instruments constitute the most important part of the orchestra; as solo instruments they are rivalled only by the piano; and as used in small instrumental combinations, they form the basis of most chamber music.

As we go through the four sections of the symphony orchestra, we shall find that the instruments within each section have various points in common, both as to construction and tone quality. The instruments of the string section are similar in appearance, but they vary considerably in size. Since everyone is familiar with the violin, the others may be described in relation to it: the viola is about one fifth larger than the violin, and is held in the same way when being played; the cello is considerably larger, so that the cellist is seated while playing, and holds his instrument, larger section down, between his knees; the double bass is so much larger than the cello that the performer either sits on a high stool or stands up while playing.

All violins, violas, and cellos, and most basses, have four strings, some basses have a fifth string for lower tones. (None of the basses used in the Minneapolis Symphony have more than four strings; some of them have an extension on the lowest string, and additional lower tones may be played by using this extra section.) Each of the strings is tuned to a different pitch. In the case of the violin, for example, they are tuned in fifths: the lowest is tuned to G, the next to the D which is five tones above, the next to A, and the highest to E. The strings are placed on the instrument in such a way that the player may strike either one or two of them at a time, but with our modern bows never more than two at a particular instant. The bow is held in the right hand while the fingers of the left are used to "stop" the strings; that is, by placing his fingers at different points on a string, the player, by thus shortening the vibrating section of the string, can produce many different tones. Were it not for this, the player would be forced to confine himself to just a few tones—obviously an unsatisfactory arrangement.

These four stringed instruments have other points in common also. For one thing, all are played either with bows or through plucking the strings. Everyone is familiar with the general appearance of the bows used, and with the way they are drawn over the strings, but many people do not know what is meant by *pizzicato* playing. This consists of plucking the strings with the fingers, producing a short, snapped tone. The stringed instruments are alike also in that all use a type of mute—a little piece of metal or other material placed on the bridge, to reduce the brilliance of the tones, giving them a veiled, and often somewhat eerie quality.

We should notice that the piano is not classified with the stringed instruments. Altho it does possess strings, the piano sounds when its strings are struck; they are not touched with a bow or plucked with the fingers. Therefore, the piano might be considered a percussion instrument, since the regular instruments of that type are made to sound by being struck. But such a classification would be forced; the piano is quite unlike the violin and the other stringed instruments in appearance and tone, and unlike the drums despite the similarity noted above, and hence it is best left by itself. The harp is sometimes placed with the stringed instruments, since it has strings and these sound when they are plucked, but here again, the classification is artificial. It is seen, therefore, that the instruments of each section resemble the other instruments of the section not only in superficial, constructional details, but in the manner of playing and the type of tone produced.

Records: For all of the lessons on instruments, examples will be chosen from any music which is suitable. So far as is possible, demonstrations will be given on the instruments themselves, altho recordings will also be used.

Lessons 8 and 9. The Wood-wind Instruments. November 17 and 24, 1938

Program Notes: There are eight wood-wind instruments in common use today. In distinguishing between these, it is helpful to arrange them in four pairs; altho it is a minor error to confuse the instruments of a single pair, it is very desirable not to confuse a member of one group with one from another.

1. The *flute* and the *piccolo* make up one pair. They are similar in appearance, both being open pipes with a mechanism of holes and keys to produce the various notes, altho the piccolo is about one-half the length and size of the flute, and is an octave higher in pitch. In this connection it is interesting to notice that the name of the piccolo in French and German (*petite flute*, *kleine Flöte*) means "little flute," and that our word "piccolo" is derived from an Italian word meaning "small." Flutes and piccolos are nowadays almost invariably made of metal and have a silvery appearance, altho the other instruments in the section are usually made of wood, except some clarinets. All of these instruments were originally made of wood—hence the term "wood-wind," the name retained in spite of changes in construction materials for some of them.

2. The *English horn*, despite its misleading name, is a tenor oboe, and should be classified with the oboe; it bears much the same relationship to the oboe as does the viola to the violin and the alto voice to the soprano voice. Oboes and English horns look somewhat alike and sound so much the same that many people cannot distinguish between them. At a distance the oboe looks much like the more familiar clarinet, but a close examination will reveal significant differences, especially in the type of mouthpiece used. The oboe mouthpiece consists of two reeds bound together, which are inserted in the uppermost end of the instrument. It is this double reed, as it is called, which gives the instruments of the oboe group their distinctive, nasal, plaintive tone. The English horn is like the oboe, except that being a fifth lower in pitch, it is slightly larger. It too has a double reed.

There has been much speculation as to the way in which the English horn got its name, since it is neither a horn, in the popular sense of that term, nor is it English. Two theories have been advanced for this misnomer. The French name is "cor anglais," which translates as "English horn." Some early specimens of the instrument did not have a straight tube as is customary today, but were bent in the middle. It has been suggested that "cor anglais" was originally "cor angulé," "angulé" meaning "bent" or "angular." The two French words, "anglais" and "angulé" are pronounced much alike, and it has been suggested that the terms may have been interchanged, with the instrument becoming a "cor anglais" or English horn. The other theory advanced for the misnomer is that when the instrument was given a bend to facilitate its handling, the name was adopted on account of its resemblance to a kind of hunting horn used in England at the time. The first theory is the more probable solution of the riddle of the instrument's name, but it remains an unproved hypothesis.

3. The third pair comprises the *clarinet* and the *bass clarinet*. As its name indicates, the latter is a lower-pitched, deeper-toned clarinet. The clarinet is a single reed instrument. Its mouthpiece is of rubber, with the reed attached to the lower side. (The oboe, it will be recalled, has a mouthpiece consisting of two reeds bound together.) The bass clarinet looks something like a saxophone, which is indeed derived from the clarinet family, but fortunately it does not sound like one. Since the bass clarinet, like the double bassoon, is not often used in prominent passages, listeners need not be greatly concerned with it.

4. The *bassoon* and the *contra-bassoon* (also called the double-bassoon) make up the fourth pair of wood-winds. These are alike in appearance and sound, altho the latter is an octave lower than the former, and contains much more tubing. The contra-bassoon is very seldom used for solo roles in the orchestra, and neither is used frequently as a solo instrument elsewhere. The bassoon is a double reed instrument, and has a mouthpiece like the oboe, except that it is somewhat larger.

Lessons 10 and 11. The Brass and Percussion Instruments. December 1 and 8, 1938

Program Notes: The brass section of the symphony orchestra contains French horns, trumpets, trombones, and tubas, and sometimes cornets and baritones (or euphoniums).

The French horn is unquestionably the most important brass instrument in the orchestra. In concert bands, however, the principal cornet player and the first baritone player

have more important roles than does the first horn player; this fact, together with the prominence of the trumpet and trombone in dance bands, explains why the French horn, the most important brass instrument of the symphony orchestra, is for the uninitiated listener, the least familiar. The horn has much tubing—it would be about sixteen feet long if unwound—and it is circular in shape. The bell—the place out of which the sounds come—points backward instead of ahead as is the case with the trumpet and trombone. The tone of the horn is mellow and lovely; because of the structure of the instrument it can be played very softly, and possesses a flexibility making it possible for composers to use it in soft delicate passages with the strings and wood-winds when the other brass would be out of the question.

Confusion sometimes results from the various uses of the word "horn." Strictly, the term "horn" applies to the French horn only, whereas the entire section is referred to as "the brass" or "the brass section," and never as "the horns." Altho the brass instruments are often carelessly called "horns," informed people reserve the word "horn" for the French horn. Some misunderstanding is caused by the similarity between the names of the English horn and the French horn; the only possible reason for this misapprehension is in the names themselves, since the English horn is a tenor oboe, a wood-wind instrument, while the French horn is a brass instrument, and neither one sounds nor looks anything like the other.

Most people are familiar with the trumpet and the cornet. These two instruments are much alike in appearance and tone quality, and can play the same part, but a close examination will reveal that the trumpet is longer than the cornet, and that its bore is not so conical; that is, from mouthpiece to bell, the cornet tubing widens more gradually, whereas the trumpet tubing flares out more at the very end, near the bell. Further, the tone of the trumpet is more brilliant and piercing while that of the cornet is mellower and rounder. In symphony orchestras, trumpets are almost invariably used, altho the important solo roles in bands are usually taken by cornets.

The trombone is easily distinguished by its slide, and is familiar to almost everyone who has ever watched the players in a symphony orchestra, a concert band, or a dance orchestra. The brass section of the orchestra also includes the tuba, the lowest pitched of the brass. The tuba plays the same notes as does the sousaphone, but it possesses a superior tone and is, therefore, preferred among symphony players. (The sousaphone is the very large brass instrument which seems to wrap itself around its player, and which provides an imposing background for so many concert bands and dance orchestras.)

Occasionally symphonic music contains parts for baritones, but band music always does, and in the band, the baritone, or euphonium as it is often called, is one of the most important instruments. The baritone looks like a small tuba, and is held like a tuba while being played—on the performer's lap, with the bell pointing almost straight up. Its tone is round and full, heavier than that of the French horn, and not so penetrating as that of the trombone.

To the percussion section, or the battery, are assigned all the instruments made to sound by being struck. As expanded by the demands of dance and theater music the section also includes all the noise makers imaginable, and even the symphony drummer many find himself, through the whim of some contemporary composer, pounding a piece of iron with a hammer, shaking a rattle, or blowing a contraption which makes a sound like a baby's wail. But the percussion instruments utilized in most symphonic music are the kettledrum, and the bass and snare drum. The latter two are so familiar as to require no comment, but the kettledrums, or tympani, are not so well known. There are usually two or three kettledrums in an orchestra. These look like large kettles—hence their name. They are the only drums in common use which have definite pitch, and for this reason may be utilized in passages of a most delicate and musical nature. Altho capable of a roar like thunder, they may be played very softly with splendid effect. The players in the percussion section also handle the celesta, the xylophone, the tambourine, and the

triangle, in addition to the cymbals, bells, castanets, and gongs, not to mention any unusual sound effects a composer wishes to introduce. Symphony orchestras have from one to four men in the percussion section, depending upon how many instruments are called for by the score; the tympani player plays most of all, and seldom takes on additional duties, but the other drummers are generally very versatile, jumping in the course of a few measures of music from cymbals to bells to foghorn and back again!

Lessons 12 and 13. The Historical Development of the Symphony Orchestra.
December 15 and 22, 1938

Program Notes: Now that we have examined the instruments separately, we shall devote two programs to the problem of organizing them into a full symphony orchestra. For the first time in the eight years in which this Music Appreciation Course has been presented, we shall consider the orchestra at different stages of its development. The full symphony orchestra did not spring into existence spontaneously, nor is its present composition static, since additional instruments are still being added. The orchestras which first played the music of Bach, Handel, Mozart, and Beethoven, were smaller, and different in composition, than those we hear today. The differences included such items as these: the number of kinds of instruments was less than today; the instruments themselves often had different characteristics; the total number of players was usually smaller than we would find in an orchestra now; and the composers' treatment of the instruments was often quite different. During these two broadcasts some examples of these things will be presented. Unfortunately space forbids any discussion of the orchestra in its earlier stages, so that the program notes are confined to a description of the full orchestra of today.

It is customary to divide the instruments of the orchestra into four groups—the strings, wood-winds, brass, and percussion. Each of these has been discussed separately in the course of the programs in this unit. If we take a modern orchestra of one hundred players as a group of typical size, then we should find that approximately three fifths of its members are in the string section. There are usually about 18 first violins, 16 second violins, and 10 or 12 each of violas, cellos, and basses, the exact number varying from orchestra to orchestra. The second violinists use instruments identical with those of the first violin section; the difference is that the seconds play a part which stands in relation to the first part as does the alto to the soprano in a quartet of voices. The violas usually play a part pitched below that of the second violins, the cellos a part lower than that of the violas, while the double basses take the lowest notes of all. It should be observed that through the ranges of its several instruments the string section, like the wood-winds and the brass, is capable of producing full harmonies in all registers from the highest to the lowest. The string section is the most important musically as well as numerically in an orchestra; in addition to playing most of the time while the other instruments are in use, the strings have important passages by themselves, and composers often write for the string orchestra alone, without the wood-winds, brass, or percussion.

In symphonic music the number of wood-wind instruments varies from piece to piece. Realizing that usage in this respect is not fixed, one can nevertheless select a typical wood-wind section as an example. Let us say that in a particular instance a composer has written wood-wind parts as follows: 2 flutes, 1 piccolo, 2 oboes, 1 English horn, 2 clarinets, 1 bass clarinet, 2 bassoons, and 1 contra-bassoon. With this instrumentation, the number of wood-wind players in a symphony orchestra of 100 men would come to 12, a small group when it is realized that the same orchestra would include about 60 players in its string section. Another significant difference between the string and wood-wind sections comes in the fact that usually there is a separate part, with different notes, for each of the wood-wind players, whereas in the string section all 18 first violins play together, all 16 seconds play the same part, and there are also common parts for the members of the viola, cello, and bass sections respectively; in other words, for the string

section of 60 players there are customarily 5 different parts, but for the wood-wind group of 12 players there are 12 parts.

As in the case of the wood-winds, the number of players in the brass section varies from piece to piece, but at full strength the section usually includes 4 French horns, 2 or 3 trumpets, 3 trombones, and 1 tuba. Usually no trumpets or horns are used unless at least 2 of each are employed, and there are either 3 trombones or none. Like the wood-winds, the brass players have individual parts. Altho numerically small, the brass can make themselves heard without much difficulty; in the hands of fine players, however, brass instruments produce an abundance of full, musical tones, in contrast to the objectionable noisy blasts made by poor performers striving to play *fortissimo* (very loudly).

The musical mainstay of the percussion section is the kettledrum, of which there are usually 2 or 3, played, however, by one man. Bass and side or snare drums are sometimes added, as are many other instruments on occasion. From 2 to 4 men are employed in the percussion department. The orchestra outlined here totals about 100 players—the customary number. Smaller symphony orchestras—those of from 65 to 85 men—differ from larger ones, not in the number of kinds of instruments employed, but mainly in the number of players in the string section.

The seating plan for the players varies from orchestra to orchestra at the discretion of the conductor. Generally speaking the violins are either concentrated at the leader's left at the front of the stage, in which case the cellos and violas are placed to his right, or else the first violins are to the left and the second violins to the right of the conductor; in any event the stringed instruments are placed at the front, with the exception of the string basses which are lined up in the last row at the very back, or to one side. The brass and wood-winds are arranged somewhere back of the body of strings, and generally the instruments of a single section are grouped together. The percussion is usually placed well back in the orchestra. In most cases symphony orchestras employ a system of raised platforms so that the players nearest to the conductor place their chairs either on the stage floor or on a very low platform, the height of the platforms increasing until those in the back are highest of all.

It will be helpful if the listener keeps in mind the division of the orchestra into four sections. The skillful composer uses these sections separately, he employs combinations of instruments from different groups, and sometimes writes for all of them together; the result is that he can provide a great variety of tone color in his orchestral music. Some of these things will be illustrated on these broadcasts.

(Most of the time symphony orchestras employ neither pianos nor organs. The principal use of pianos in small orchestras is to supply missing parts, and this, of course, is not necessary in a large ensemble. Composers often write concertos for piano and orchestra, but in these the piano appears as a solo instrument, and not as a part of the orchestra itself. Modern composers often use the piano in orchestral music, but do so in order to utilize its particular tone quality, not in the substitute role in which it is employed in small groups. Likewise composers occasionally write parts for the organ; this is probably done in order to obtain additional sonority. But generally speaking, symphony orchestras do not have parts for either the piano or the organ.)

LISTENING TO MUSIC OVER THE RADIO

Lessons 14 and 15. How to Get the Best Out of Your Radio.

December 29, 1938 and January 5, 1939

Introduction: These two programs on the broadcasting of music are an innovation for this Music Appreciation series. Since the radio offers such a convenient means of hearing fine music, and inasmuch as many people hear more music by radio than in the concert hall, it appears worth while trying the experiment of including in these broadcasts two programs dealing with this subject. They will take up various aspects of the technique

of broadcasting musical groups about which listeners in past years have often inquired, and they will present an explanation from the standpoint of both the musician and the engineer (altho in nontechnical language), of the possibilities and limitations of musical broadcasts. The programs will also include a discussion of radio receiving sets and the importance of proper radio reception. Various laboratory tests, frequently used by radio engineers in adjusting their own equipment, will be employed. Coming during the holiday season, these programs will offer an excellent opportunity for listeners to test out their Christmas radios, and to verify the claims made for them by their enthusiastic salesmen!

During these two programs, Mr. Paulu will have the assistance of Waldemar M. Klimka, chief engineer of WLB.

LISTENING TO CHAMBER MUSIC AND TO COMPOSITIONS WITH SEPARATE MOVEMENTS

Lessons 16 and 17. Chamber Music by Earlier Composers. January 12 and 19, 1939

Introduction: The music to be heard during this unit of programs has been arranged to illustrate two things: (1) the combinations of instruments which play chamber music, and (2) the relation of movements to each other in those extended instrumental works which contain several movements. Since the principal chamber works are almost invariably cyclical in form—that is, they are in several movements—the second of these points follows naturally from the first.

Program Notes: The great composers have given us their best in their chamber compositions; yet few opportunities are presented to hear these works. At first, one might conclude that this music has been neglected because it is either inferior or dull, but this is not the case. Haydn, Mozart, Beethoven, Brahms, Schubert, and Schumann—to mention six great composers chosen at random—all wrote more chamber music than they did orchestral music, and were just as inspired in creating the one as the other, but there are very many more opportunities to hear overtures and symphonies by these men than there are chances to hear their chamber works. It is very unfortunate that these musical masterpieces should collect dust in neglected corners, and WLB has always tried to bring to the attention of its listeners the great chamber works of musical literature.

The first step in forming an acquaintance with chamber music is to acquire some knowledge of the groups of instruments which play it. As the name indicates, chamber music is music for performance in a single room or chamber, as contrasted with music intended originally for performance in large halls. For this reason, it is composed for a small group of instrumentalists. Usually such compositions, because they are written with smaller audiences in mind, are of a more intimate character than are works for symphonic groups, and should be heard under conditions in which this intimate relationship between the music, the performers, and the listeners may be maintained. Richard Wagner, who himself wrote practically nothing of this sort, nevertheless said that chamber music was the "music of friends." On account of economic considerations, string quartets and similar groups often perform in large auditoriums, with the result that much of the charm of the music is lost; to be really enjoyed, chamber works should be heard in small rooms, where a degree of personal contact between the performers and listeners is possible. Here the radio, or recordings played in one's own home, serve as an excellent substitute for the real thing, because the radio listener is always in close contact with the performers, and he always has a "front seat." Furthermore, the music of small units can be better reproduced than that of large organizations, since minor shadings of tone and similar refinements are better preserved in the recordings or broadcasts of small groups.

For our purposes, it will be sufficient to consider only these combinations of instruments which comprise chamber groups today. The stringed instruments are the basis for

most of the significant chamber music. A few examples exist of solos for stringed instruments unaccompanied; outstanding are the six sonatas for violin and cello respectively, composed by Johann Sebastian Bach. (These programs for 1936-37 included the Bach *Sonata in D Minor*.) There are also some duets for violin and viola, viola and cello, or some other similar group, (such as the Mozart *Duet in B \flat Major*, played in the season of 1935-36), as well as a number of trios for violin, viola, and cello. But the classic combination in chamber music is the string quartet. The quartet is made up of two violins, one viola, and one cello. It should be remembered that the term "string quartet" is applied only to this particular group, and not to any four stringed instruments. The quartet is sometimes enlarged to a quintet; usually this is done through the addition of another viola (as in the Mozart *Quintet in G Minor* played on these programs several seasons ago), but sometimes the additional instrument is a cello (as with the Schubert *Quintet in C Major* used in 1936-37.) String sextets usually made up of two violins, two violas, and two cellos, are also encountered.

The piano is often added to these groups of strings. Mention was made above of the Bach sonatas for violin or cello without accompaniment; it is more customary, however, to write such works for a stringed instrument with a piano. The piano is used with the violin and cello to form the piano trio (as in the Tschaikowsky *Trio in A Minor* being used on this season's programs), with the violin, viola, and cello to become the piano quartet (as in the Brahms *Quartet in G Minor* used in 1936 and 1937), and with the four instruments of the string quartet to comprise the piano quintet (the most famous example of which is the Schumann *Quintet in E \flat* which was heard in 1934-35). It should be remembered that these terms have a conventional meaning and are not applied loosely; thus a piano quintet is always made up of two violins, with a viola, cello, and piano—it is not a quintet of pianos, nor is it any group of four strings with a piano! Schubert, for example, scored his *Trout Quintet* for a piano with a violin, viola, cello, and double bass, but this is not called a piano quintet.

In considering compositions for stringed instruments and piano, we must realize that the piano is an integral part of the musical fabric, and is not just an accompanying instrument. For example, the Brahms viola sonata used on these programs is by no means a viola solo with piano accompaniment, but is more like a duet for two instruments. It is not customary to refer to such a work as a duet however; rather, the statement that the music in question is a sonata for viola and piano implies the equality of the parts. The same generalization applies to the other combinations in which the piano is used. (Often composers do write solos for stringed instruments with piano accompaniment in which the latter instrument has a distinctly minor role, but the more ambitious works are not of that sort.)

Sometimes combinations of stringed and wind instruments are encountered in the music of the masters. Brahms composed two sonatas for clarinet and piano, but realizing the difficulty of having the works performed that way, he provided alternate versions so that the clarinet parts might be played on a violin or viola. These programs in the past have included a trio by Brahms for violin, French horn, and piano—a most unusual grouping, and a quintet by Mozart for a clarinet with the instruments of the string quartet. However, only a few really significant works for such combinations have been written. The Mozart sextet and the other shorter works to be heard on Lesson 16 are scored for unusual combinations, but their musical value is not comparable to that of the other chamber works we are hearing.

There is one more thing to be mentioned before we conclude this discussion of chamber music. Composers write chamber music so that each instrument has a part of its own, and the several instruments of the unit are treated more like a collection of soloists than as a group in which one part is important and the others secondary. At times we hear over the radio and in such places as tearooms, trios or quartets of stringed instruments with piano, which play arrangements of various familiar melodies. Such arrangements are

not comparable to the compositions for the chamber groups we have been discussing, either as to the merit of the music, or as to the type of instrumental treatment involved.

Most of the serious works for the various chamber groups enumerated above are cyclical—that is, they possess several movements which are written in accordance with certain conventional forms, and which bear a certain relationship to each other. A complete cyclical work usually contains three or four movements, each of which is contrasted with the others in mood and in type. A three-movement work generally consists of an opening section in sonata form which is rather fast in tempo, serious, and more or less imposing. The second movement is simpler in structure, and usually is a "slow movement," that is, it is primarily melodic, often approximating a song, and is less dependent upon rhythmic appeal. The last movement is generally fast, and is planned to conclude the selection in an energetic, forceful manner, a practice comparable to the natural impulse to give a story a happy ending, or to the human trait of trying to leave a strong, favorable last impression. A four-movement piece may be roughly described as a three-movement work with the addition of an extra movement between its second and last sections. The movement added is usually either a minuet, a scherzo, or a derivative of one of them. It is generally much lighter in emotional content than the second movement, and more rhythmic in character; it is as if the composer, after requiring our concentration during the second section, lets us relax and dance away our cares during the third.

One of the purposes of movements in cyclical works is to provide variety; it is for this reason that they are contrasted with each other in tempo, in character, and in the degree of concentration they require of the listener. As a logical variant of the customary order of movements, there are four-movement works in which the second movement is the scherzo, while the slow movement is placed third. This is the case with the Beethoven *Ninth Symphony*, for example. Because the profound opening section of this work demands a high degree of concentration, Beethoven placed the "relaxation movement" after the first movement instead of in the usual place. The Beethoven quartet used on these programs this year also puts aside the customary procedure. The first movement is not in a very rapid tempo, so that the scherzo comes second, the slow movement third, and a fast section last. The Brahms *Sonata in E \flat for viola and piano*, has three movements, the second being, like the first, an allegro. But this is compensated for by the fact that the final variation of the third movement—which in the main is written in a moderate tempo—is fast and lively. Such exceptions merely illustrate further one of the basic rules governing the construction of compositions in several movements; that is, the movements are arranged to provide a contrast between each other, to heighten the effect of each.

Finally it should be observed that altho music is usually written so that the performers stop for a moment before beginning each new movement, there are numerous exceptions. The last two movements of Beethoven's *Fifth Symphony*, for example, are played without pause, as are the last three movements of the *Sixth (Pastoral) Symphony* by the same composer, which, incidentally, contains five movements. In the past the cyclical works played on these programs have often contained movements which followed each other without pauses, but that is not the case with any of the compositions used this season.

Records: Mozart: *Sextet in F*, K. 522, played by the Kolisch Quartet, with Domenico Caputo and John Barrows (horns). Excerpts will also be played from various compositions to illustrate some other instrumental combinations used in chamber music.

Lesson 18. The Sonata in E Flat, Opus 120, No. 2, by Johannes Brahms.

January 26, 1939

Program Notes: Johannes Brahms (1837-1897) greatly admired the playing of Richard Mühlfeld, the first clarinetist in the orchestra at Meiningen, Germany—the same orchestra which gave the first performances of the master's *Fourth Symphony*. Brahms described this man as "absolutely the best wind instrument player" he knew. He was so much impressed

by Mühlfeld that he asked him for a private recital, during which the clarinetist explained many points about his instrument which proved invaluable when Brahms composed the four chamber works in which he utilized the clarinet. Brahms wrote a trio for clarinet, cello, and piano, a quintet in which the clarinet was combined with the conventional instruments of the string quartet, and two sonatas for clarinet and piano. These compositions were his last chamber works.

Brahms provided alternate parts so that the clarinet could be replaced by strings in the event that no clarinet players were available. In the case of the two sonatas in Opus 120, he wrote such parts for either the violin or the viola. In the violin version, Brahms also rewrote the piano part slightly so that the ensemble would be properly balanced. In the edition for viola, the piano part is retained as in the original, but the clarinet part is made over. However, the general musical fabric is not changed in any of these. In our recording the viola and piano version is used.

The *Sonata in E Flat* has three movements. The first is in rapid tempo, the second is also a fast movement, but unlike the first, is not in sonata form. The final movement is a theme and variations, the last variation being in rapid tempo, giving the effect of the conventional final allegro.

Records: Brahms: *Sonata in E Flat Major*, Opus 120, No. 2, played by William Primrose (viola) and Gerald Moore (piano).

Lessons 19 and 20. The Trio in A Minor by Tschaiowsky. February 2 and 9, 1939

Program Notes: The *Trio in A Minor* is the only significant chamber work composed by Peter Ilich Tschaiowsky (1840-1893) utilizing the piano in combination with stringed instruments. Tschaiowsky's chamber works do not make a very impressive list, since they include, aside from the trio, only three quartets, one sextet, and a few fragmentary pieces. This trio is the outstanding work of the group. It is a delightful composition, one which will certainly appeal to those who like the Tschaiowsky of the symphonies and the *Romeo and Juliet Fantasy-Overture*, and yet one which will not displease those people who pride themselves on being immune to most of his music. In Russia, this is the most popular of Tschaiowsky's works; considering its attractiveness, it is strange it is not given more performances in the United States.

In view of the fact that Tschaiowsky had strong prejudices against the combination of the piano with stringed instruments, it is interesting to notice the conditions which resulted in his writing this trio. Tschaiowsky was a close friend of Nicholas Rubinstein, a brother of the better known Anton Rubinstein, the great pianist. Nicholas was also an outstanding musician, and he used his influence as conductor and pianist to publicize the music of the more socially reticent Tschaiowsky. The death of Nicholas Rubinstein in 1881 was a great blow to Tschaiowsky, and in his honor he composed this trio—his only composition for the year following Rubinstein's death. The dedication of the work was not directly to Rubinstein; the second sheet of the original edition of the trio contained the etching of a large floral wreath such as is placed on graves, in the center of which were the words "A la mémoire d'un grand artiste"—"To the Memory of a Great Artist." We know, however, that the great artist referred to was Nicholas Rubinstein.

Tschaiowsky explained to one of his contemporaries why he scored the trio as he did. Anything which was intended to honor so great a pianist as Nicholas Rubinstein, he said, must contain a prominent part for the piano. A piano concerto seemed too brilliant a work to commemorate the passing of a close friend, while a piano solo would not be adequately pretentious. Therefore he decided in favor of a trio for piano with violin and cello. The theme used for the variations in the second movement, was one suggested to him by some Russian peasant songs he heard during an outing made in company with Rubinstein nine years before the trio was written. On this occasion Tschaiowsky and Rubinstein, with several of their friends, went into the country near Moscow on a beautiful spring day.

As they sat in the meadows they were soon surrounded by peasants, and Rubinstein purchased food and wine in a nearby village store, for distribution among the members of the party. At Rubinstein's suggestion the young people of the village sang and danced. When Tschaiakowsky was composing this trio, he recalled this outing, and drew upon one of the folk songs then heard for his theme. It is likely, however, that the theme as we have it underwent some modification before being incorporated into this work. There is reason to believe that the variations either represent different incidents in the friendship of Tschaiakowsky and Rubinstein, or else describe characteristics of Rubinstein's personality, but there is no definite proof of this. It is doubtful, however, if our enjoyment of the music would be greatly increased were such an analysis available.

This composition is exceedingly long, taking about forty-five minutes to perform. In spite of its length, it contains only two movements, a procedure somewhat out of the ordinary. The first movement follows roughly the general outlines of the sonata form. The second movement, the theme and variations, is structurally the more interesting of the two. Variations are to be encountered formally and informally in all music from Bach's predecessors up to the "jam session" of a group of "swing" musicians today. In its simplest form a variation is a repetition of a theme with changes; that is, when a theme is "varied" we have a "variation." At the outset the theme is given in its original form so that the listener may know what the basis of the variations is to be, and then it is repeated a number of times with new changes and elaborations introduced on each subsequent repetition; it is these repetitions which constitute the variations. Usually a variation matches the theme, measure for measure, but sometimes it consists of an intensive development of one phrase or part of the theme; this procedure is not customary, being a treatment employed more often in the development sections of sonatas. Usually as the variations progress they become more and more elaborate, departing farther and farther from the original melody; frequently the more highly developed types of variations depart so far from the theme that the resemblance is merely theoretical, and can be observed only from a study of the music.

Ardante con moto

p cantabile

poco più f

p

The Tchaikowsky variations adhere closely to the theme so that they are not difficult to follow. The theme is printed above. It is suggested that they be played until it is familiar; if the listener's pianistic skill is inadequate to cope with the theme as it is given here, the melody—the top notes alone—will suffice, since after all it is the most important part. (The manuscript for the music illustrations was contributed by Jesse Meltzer of the Minneapolis Symphony Orchestra.)

Records: Tchaikowsky: *Trio in A Minor*, Opus 50, ("To the Memory of a Great Artist"), played by Hephzibah Menuhin (piano), Yehudi Menuhin (violin), and Maurice Eisenberg (cello).

Lesson 21. The Quartet in F Major, Opus 135, by Beethoven. February 16, 1939

This unit of programs on chamber music and cyclical works will be concluded with the *Quartet in F Major*, Opus 135, by Ludwig van Beethoven.

Program notes are given on pages 29 to 31.

Records: Beethoven: *Quartet in F Major*, Opus 135, played by the Lener Quartet.

LISTENING TO VOCAL MUSIC

Lessons 22 and 23. The Human Voice. February 23 and March 2, 1939

Introduction: The seven lessons in this unit will be devoted to vocal music. The first two broadcasts will deal with voices in much the same manner that the lessons in the third unit took up the instruments of the orchestra. Earle Killeen, professor of music in the University of Minnesota Music Department, and the leader of the University Singers, will appear as guest speaker on these two programs. During the remaining broadcasts of this unit, we shall examine various types of vocal music, including a cantata, a concert aria, some German and Norwegian songs, and an excerpt from a Wagnerian opera.

Program Notes: Earle Killeen, who will conduct Lessons 22 and 23, has provided the following paragraphs on types of voices.

"The popular method of designating the four voices of the mixed quartet is to call the high woman's voice *soprano*, the low *alto*, the high man's voice *tenor*, the low *bass*. These divisions are correct enough in that all voices are roughly divided into four types; but there are too many subdivisions, and too many exceptions to permit the use of so simple a system. The more accurate basis for division is tone quality, but even this does not account for all the self-styled singers whose titles are derived from the type of music sung, rather than the kind of voice.

"A coloratura soprano is such a singer. Her range and quality may be the same as that of a lyric soprano, but through choice and training she specializes in florid music, while the lyric soprano, who may be able to sing a coloratura aria successfully, specializes in music less florid, and interprets texts more skillfully.

"A dramatic soprano must possess a voice of deeper quality, and of greater diameter and power, than the above two, although her range may be equally high. Many voices possess extended ranges which include about two divisions—soprano and contralto. Such a voice may be styled mezzo-soprano if the quality is not deep, or contralto if the lower tones are full.

"The most frequently encountered male voice is the baritone, which corresponds to first bass in a male quartet, although a high baritone may sing second tenor. An operatic baritone must possess an upper G and A₂, and yet young singers are certain they are tenors when they can reach these tones. The highest tenor is usually called lyric, though his range may not exceed that of the dramatic tenor. As soon as a tenor sings opera, he becomes a dramatic tenor. However, there are dramatic tenors whose voices are baritone in quality, which are really extended baritones. Because baritones are so numerous, many of them strive to become tenors or basses, in order to make their voices more remunerative. The lowest male voice is given different designations, such as basso-cantante and basso profundo. In America, tenors are more numerous than true basses."

Records: The music will be chosen from any selections available which illustrate the points of the lectures.

Lesson 24. The Cantata. March 9, 1939

Program Notes: On this program we shall hear a cantata ridiculing the devotion of the ladies of Leipzig to coffee drinking. This was composed by no less a person than Johann Sebastian Bach, whose name is linked with the most serious and profound of the world's music! Bach wrote several hundred cantatas for church performance, and about thirty-eight secular cantatas, of which twenty-four have survived. In the absence of any operas by Bach, these secular cantatas constitute the form nearest to the opera in which he composed.

Coffee made its appearance in Europe toward the end of the sixteenth century, and the new drink was both praised and condemned. Many reformers opposed it, and even King Charles II of England went to the point of trying to suppress the coffee houses by royal decree, altho his opposition probably resulted mainly from his conviction that coffee houses were centers of political agitation. The new drink was popular with the ladies, and it came to occupy a position in the eyes of the reformers like that given to bridge clubs and cigarette smoking by some conservative circles today. The text which was supplied by Christian Friedrich Henrici, was intended as a gibe at the fair sex of Leipzig. Bach's music is very charming, and the cantata makes good listening for anybody. The text is given below:

1. RECITATIVE

Narrator:

Schweigt stille, plaudert nicht,
und höret, was jetztund geschicht:
Da kommt Herr Schlendrian
mit seiner Tochter Lieschen her;
er brummt ja wie ein Zeidelbär;
hört selber, was sie ihm getan!

2. ARIA

Schlendrian:

Hat man nicht mit seinen Kindern
hunderttausend Hudelei
Was ich immer alle Tage
meiner Tochter Lieschen sage,
gehst ohne Frucht vorbei.

3. RECITATIVE

Schlendrian:

Du böses Kind, du loses Mädchen,
ach! wenn erlang' ich meinen Zweck:
Tu mir den Coffee weg!

Lieschen:

Herr Vater, seid doch nicht so scharf!
Wenn ich des Tages nicht dreimal
mein Schälchen Coffee trinken darf,
so werd' ich ja zu meiner Qual
wie ein verdorrtes Ziegen-Brätchen.

4. ARIA

Lieschen:

Eil wie schmeckt der Coffee süsse,
lieblicher als tausend Küsse,
milder als Muscaten-Wein.
Coffee, Coffee muss ich haben;
und wenn jemand mich will laben,
ach, so schenkt mir Coffee ein!

5. RECITATIVE

Schlendrian:

Wenn du mir nicht den Coffee lässt,
so sollst du auf kein Hochzeitstest,
auch nicht spazieren geh'n.

Lieschen:

Ach ja! Nur lasset mir den Coffee da!

Schlendrian:

Da hab ich nun den kleinen Affen!
Ich will dir keinen Fischbein-Rock
nach jetzt'ger Weite schaffen.

1. RECITATIVE

Narrator:

Be silent, do not talk,
and listen to what happens now:
Here comes Herr Schlendrian
with his daughter, Lieschen;
he is grumbling like a bear;
hear for yourselves how she has treated
him!

2. ARIA

Schlendrian:

Don't our children give us
a hundred thousand headaches!
What I tell my daughter, Lieschen,
every day is of no avail.

3. RECITATIVE

Schlendrian:

You stubborn child, you wicked girl,
oh! when shall I have my way:
Give up coffee!

Lieschen:

My father, don't be so severe!
If I can't drink my cup of coffee
three times a day,
I shall, to my distress,
become like a dried-up goat steak.

4. ARIA

Lieschen:

Oh, how sweet the coffee tastes,
more lovely than a thousand kisses,
milder than Muscatel.
Coffee, coffee I must have;
and if you wish to please me,
oh, then give me coffee!

5. RECITATIVE

Schlendrian:

If you won't give up coffee,
there'll be no wedding for you,
nor will I permit you to go for a walk.

Lieschen:

All right, very well;
but let me keep my coffee!

Schlendrian:

There I have the little monkey!
I shall not give you a whalebone dress
In the latest fashion.

Lieschen:

Ich kann mich leicht dazu versteh'n.

Schlendrian:

Du sollst nicht an das Fenster treten
und keinen seh'n vorüber geh'n.

Lieschen:

Auch dieses, Doch seid nur gebeten
und lasset mir den Coffee steh'n.

Schlendrian:

Du sollst auch nicht von meiner Hand
ein silbern oder gold'nes Band
auf deine Haube kriegen.

Lieschen:

Ja, ja! Nur lasst mir mein Vergnügen.

Schlendrian:

Du loses Lieschen du,
so gibst du mir denn alles zu?

6. ARIA

Schlendrian:

Mädchen, die von harten Sinnen,
sind nicht leichte zu gewinnen.
Doch trifft man den rechten Ort,
oh! so kömmt man glücklich fort.

Schlendrian:

Nun, folge, was dein Vater spricht.

Lieschen:

In allem, nur den Coffee nicht.

Schlendrian:

Wohlan! so musst du dich bequemen,
auch niemals einen Mann zu nehmen.

Lieschen:

Ach ja! Herr Vater, einen Mann!

Schlendrian:

Ich schwöre, dass es nicht geschicht.

Lieschen:

Bis ich den Coffee lassen kann?
Nun! Coffee, bleib' nur immer liegen!
Herr Vater, hört, ich trinke keinen nicht.

Schlendrian:

So sollst du endlich einen kriegen.

8. ARIA

Lieschen:

Heute noch, heute noch,
lieber Vater, tut es doch,
Ach, ein Mann! Ach, ach, ein Mann!
Wahrlich dieser steht mir an.
Wenn es sich doch balde fügte,
dass ich endlich vor Coffee,
eh' ich noch zu Bette geh',
einen wackern Liebsten kriegte.

9. RECITATIVE

Narrator:

Nun geht und sucht der alte Schlendrian,
wie er vor seine Tochter Lieschen
bald einen Mann verschaffen kann;
doch Lieschen streuet heimlich aus:
kein Freier komm' mir in das Haus,
er hab' es mir denn selbst versprochen
und rück' es auch der Ehestiftung ein,
dass mir erlaubet möge sein,
den Coffee, wenn ich will, zu kochen.

10. FINALE

Trio:

Die Katze lässt das Mäusen nicht,
die Jungfern bleiben Coffee-Schwestern.
Die Mutter liebt den Coffee-Brauch,
die Grossmama trank solchen auch,
wer will nun auf die Töchter lästern.

Lieschen:

That also wouldn't bother me.

Schlendrian:

You shall not go to the window
to see people passing by.

Lieschen:

This too, but let me only beg you
to let me have my coffee.

Schlendrian:

And furthermore you shall have no
gold or silver ribbon for your hat.

Lieschen:

Very well, but let me have my pleasure.

Schlendrian:

You naughty Lieschen,
so you give up everything?

6. ARIA

Schlendrian:

Maidens of a stubborn disposition
are not easily won over.
But, once we find a soft spot,
oh, then our troubles will be at an end.

Schlendrian:

Now, do as your father tells you.

Lieschen:

In every way, except for coffee.

Schlendrian:

Well, then you'll have to resign yourself
never to have a husband.

Lieschen:

Oh yes, father, a husband!

Schlendrian:

I swear that you shall not have one—

Lieschen:

Until I renounce coffee?
Now, coffee, farewell forever!
Listen father, I shall no longer drink it.

Schlendrian:

Then, at last, you shall have a husband.

8. ARIA

Lieschen:

Yes today,
dearest father, do it quickly.
Oh, a husband
is just what I want.
If only it would work out soon,
that before my bedtime
I have a gallant lover
instead of coffee.

9. RECITATIVE

Narrator:

Now old Schlendrian goes out,
and tries to find a husband
for his daughter, Lieschen;
but Lieschen secretly serves notice:
no suitor will be admitted to my house,
unless he promises me himself,
and adds it to the marriage contract,
that I shall be permitted
to brew coffee whenever I please.

10. FINALE

Trio:

Cats must have their mice,
and maidens their coffee.
Mother loves coffee,
and so does Grandma.
Why condemn the daughters?

Records: Bach: Coffee Cantata. Performed by Ethyl Hayden (soprano), William Hain (tenor), Benjamin Le Loache (baritone), and an Instrumental Ensemble directed from the Harpsichord by Ernst Victor Wolff.

Lesson 25. The Concert Aria. March 16, 1939

Program Notes: Most of the arias we hear are from operas or oratorios, but Beethoven's *Ah, Perfido* is a complete composition in itself. Altho his fame rests primarily on his instrumental music, Beethoven produced some equally great vocal works. His one opera, *Fidelio*, is a masterpiece. He also utilized voices in his *Ninth Symphony* and his *Missa Solemnis*, tho perhaps to the consternation of most of the people who have performed the parts! *Ah, Perfido* was completed in 1796, when Beethoven was only twenty-six years old. Since this is an early work, it often sounds Mozartian, and the instrumental portions, especially, suggest a Mozart score. Beethoven left no indication as to where he obtained the text for the aria. It is reproduced below, in the original Italian as well as in translation.

Ah, Perfido!

Ah! perfido, spergiuro, barbaro traditor, tu parti?
E son questi gl'ultimi tuoi congedi?
Ove s'inte-se tiranni a piu crudel?
Vascellerato! va, pur fuggi da me, l'ira de Numi non figgira.
Se v'e giustizia in Ciel se v'e pieta,
Congiure-ranno a gara tutti a punirti!
Ombra, seguace! presente, ovunque vai, vedro le mie vendette.
Io gra le godo im magi nando; i fulminiti veggio gia balenar d'intorno.
Ah! no! fermate, vindici Dei!
Ris parmia te quel cor, ferite il mio!
S'ei non e piu qual era, son'io qual fui;
Per lui vivea, voglio morir per lui!

Per pieta, non dirmi addio, dite priva che faro?
Tu lo sai, bell I dol mio!
Io d'affanno moriro.

Ah crudel! tu vuoch'io mora! Tu non hai pieta di me,
Perche rendia chi t'a dora cosi barbara merce?
Dite voi, se in tanto affanno non son degna di pieta?

Ah, Faithless One!

Ah, villainous, faithless, cruel traitor!
Goest thou, and are these thy last farewells?
Where has been heard tyranny more cruel?
Go, wicked one, go! From me thou may flee;
The vengeance of the Gods thou cannot escape!
But, if there be justice and pity in heaven,
All will strive to punish thee.
Where e'er thou goest, a shadow will follow thee,
And it see my vengeance!
Even now I delight in the vision,
And see the lightning flashing about thee!
Ah no! Stop, avenging Gods!
Spare that soul and take my own.
If he is no more what once he was,
Yet am I still the same;
For him I lived, for him would I die.

Have pity, do not bid me farewell.
How can I live without thee.
Thou knowest, my beautiful idol,
That with sadness I perish.

Ah, cruel one!
Thou wouldst want me to die?
Thou has no pity for me?
Why dost thou repay such love
With acts so cruel?
Tell me, if in such suffering
I deserve no pity.

Records: Beethoven: Ah, Perfido! Opus 65, performed by Kirsten Flagstad (soprano) with the Philadelphia Symphony Orchestra conducted by Eugene Ormandy.

Lessons 26 and 27. Great Songs. March 23 and 30, 1939

Introduction: These Music Appreciation programs, like all of WLB's musical broadcasts, have presented, in addition to familiar masterpieces, those types of fine music which are neglected by most radio concert series. Accordingly, they have included many examples of chamber music and art songs. Some of the world's finest composers—Grieg, Franz, Schubert, Schumann, Strauss, and Wolf, for example—have given us their best in their songs, but the average music lover is usually uninformed about compositions of this sort. Most radio stations give little or no time to such music, but WLB has presented many performances of these compositions, and the response to these programs has been such as to justify the procedure.

Program Notes: The listener's enjoyment of music depends partly on familiarity with the specific pieces to be heard, but it also depends upon his developing himself to the point where he can grasp certain concepts and hold certain attitudes towards the music he hears. Thus, such simple things as overcoming blind prejudices against serious music in

general, or against compositions by musicians with foreign names, or against pieces which do not bear descriptive titles, may play a considerable part in bridging the gap between the dislike and the enjoyment of great music. In order to enjoy types of music new to him, a listener must hear this music, and have its features brought to his attention often enough so that he can really grasp its salient characteristics. The points in themselves may be very simple, requiring little or no technical knowledge of music for their comprehension; but if they are new to the listener, and especially if they run counter to some of his incorrect preconceived notions, he may have surprising difficulty in altering his attitude so that he can really grasp and understand these new things. This is true of much of the music we present, but especially of the art songs. Most people have little or no idea of what constitutes a song or what to listen for when they hear one.

At the outset one must put aside the idea that the main point of a song is its melody; a great song may or may not have an attractive melody since its musical value depends on other factors than this. Altho it is true that we use the adjective "songlike" to describe a particularly melodious passage in instrumental music, some famous songs do not have good melodies. What then constitutes a great song? The answer is that the degree of correlation between the words and the music, and the manner in which the composer brings out the implications of the text in his setting of it, is the principal criterion. Of course this may result in a melody of striking beauty, but it may not; Schubert's *Erl King* is often considered the greatest of songs, but its melody, taken alone, is not appealing.

We must also realize that both the vocal and piano parts are important. (Most songs are written originally for piano accompaniment, and usually lose rather than gain in artistic value when the accompaniment is transcribed for more instruments.) Both parts contribute to the musical effect, and the piano is more than something to fill out the harmonies and make the song more attractive or sonorous; the piano part in an integral portion of the composition. Sometimes the melody will be divided between the two parts, and at other times the piano may present a musical comment of its own, independent of the vocal line.

A great song results from a fine musical setting of a fine poem. The composer is usually inspired to write the music by reading the poem; very seldom does it happen that a poem is written to fit some music. Since the poem inspires the music, it follows that the poem must have something to do with the character of the music; in other words, a great song is not just any tune fitted to any words, or even a fine melody to a fine poem. A song should be a musical interpretation of its text. The music is written to fit the words, not only in such superficial respects as length of lines, meter, and the like, but also as regards the innermost meaning of the poem. It is easy to understand how joyful music belongs to a happy text, and serious music to a sorrowful one, but composers often go farther than that. For example, one song by Hugo Wolf which has been used on these programs in previous years, contains a text in which the poet begins in a state of despair and gradually works up courage to conclude in a brighter vein. But as Wolf conceived it, the poet had been merely screwing up his courage, and inwardly felt the same at the conclusion of the poem as at the beginning. Accordingly, after the vocal part was finished, he provided a piano postlude in which the feeling of exaltation was let lapse, and the music ended quietly and sadly. And so it is that after studying the musical setting of a poem, we often feel that we understand it better than before hearing the music.

A great many devices are utilized by song composers, and some of these will be illustrated during the broadcasts. The listener should fix in mind two frequently encountered terms in the vocabulary of vocal music: "strophic" and "through-composed." A strophic song is one in which the same music is used for each stanza; while in a through-composed song the music, instead of being repeated for each stanza, is composed to fit each change of the text. (Our expression "through-composed" is a literal translation of the German *durchkomponiert*.) Some songs do not fall strictly into either class, but come somewhere between;

the term "altered strophic" is often applied to these, since they employ the same melody for each stanza, but alter it in part during some of its repetitions. In other words, when the stanzas of a poem are somewhat similar, the composer may let one melody and one accompaniment suffice for all of them, but when contrasting ideas and emotional states are maintained in the different stanzas, he writes the music to fit the words, changing or repeating it as the text requires. These points will be illustrated in the discussion accompanying this program.

The texts for the two songs by Robert Franz are given below. The names of the authors of the poems are enclosed in parentheses under the German titles.

Aus meinen grossen Schmerzen

Aus meinen grossen Schmerzen
Mach' ich die kleinen Lieder,
Die heben ihr klingend Gefieder
Und flattern nach ihrem Herzen.

Sie fanden den Weg zur Trauten,
Doch kommen sie wieder und klagen,
Und klagen, und wollen nicht sagen,
Was sie im Herzen sauten.

—Heinrich Heine

Widmung

O danke nicht für diese Lieder,
Mir ziemt es dankbar dir zu sein:
Du gabst sie mir, ich gebe wieder
Was jetzt und einst und ewig dein.
Dein sind sie alle ja gewesen.
Aus deiner lieben Augenlicht
Hab' ich sie treulich abgelesen,
Kennst du die eig'nen Lieder nicht?

—Wolfgang Müller

The music for the following songs is by Edvard Grieg. Most of these were originally in Norwegian, but the texts given below are in the language of performance on our recordings.

Solvejgs Lied

Der Winter mag scheiden, der Frühling vergeh'n,
Der Sommer mag verwelken, das Jahr verweh'n.
Du kehrest mir zurücke, gewiss, du wirst mein,
Ich hab' es versprochen, ich harre treulich
dein.

Gott helfe dir, wenn du die Sonne noch siehst,
Gott segne dich, wenn du zu Füssen ihm kniest.
Ich will deiner harren, bis du mir nah',
Und harrest du dort oben, so treffen wir uns da.

—Henrik Ibsen

Im Kahne

Möven, Möven in weissen Flocken!
Sonnenschein!
Enten stolzieren in gelben Socken
Schmuck und fein.
Fahr', fahr' zum Fischerstrand,
Ruhig ist es am Scheerenrand;
Rings die See liegt so stille,
Wo wo wille.

Löse, löse, mein Schatz, die dichte
Lockenpracht,
Dann lass uns tanzen die warme, lichte
Juninacht.
Wart', wart', zu Sankte Hans
Giebt es Hochzeit mit lust'gem Tanz,
Geigen in Hülle und Fülle.
Wo wo wille.

Out of My Great Afflictions

Out of my great afflictions
I make little songs,
Which lift their sounding wings
And fly to her heart.

They have found the way to the beloved,
Yet they come back and complain,
But they will not tell me
What they have seen in her heart.

Dedication

Do not thank me for these songs.
It is I who should be grateful to you.
You gave them to me—I give back
What is now, and always will be yours.
Yes, they have always been yours,
For I have faithfully read them in your eyes.
Do you not know your own songs?

Solvejg's Song

The winter may wane and the springtime
go by,
The summer too may vanish, the year may die;
But one day you'll return, that in truth I
know,
And here I'll await you as I promised long
ago.

May God guide your feet, if on earth still
you rove,
His blessed peace be yours, if in realms
above.
Faithfully I'll bide till again you draw near,
But if you wait in heaven, at last I'll meet
you there.

In the Boat

Seagulls, seagulls with plumage snowy!
Sunlight gay!
Goslings with yellow stockings showy
Strut away.
Row, row to islands fair,
All is calm o'er the shallows there,
Seas are peacefully lying,
"Fair, my lady."

Free thy gold locks from hood confining,
My delight,
Then will we dance thro' the brightly shining
Warm June night.
Wait, wait! Midsummertide
Soon will make thee my happy bride,
All of the fiddlebows flying.
"Fair my lady."

Wiege, wiege mich, blanke Welle,
Immerfort!
Lieblich naht, wie die schlanke Gazelle, mein
Schätzlein dort.
Wiege, wiege in Traum mich ein,
Du bist mein, und ich bin dein.
Geigen, schweiget nun stille!
So wo wille.

—Vilhelm Krag

Ein Schwan

Mein Schwan, mein stiller,
Mit weissem Gefieder,
Deine wonnigen Lieder
Verrieth kein Triller.

Aengstlich sorgend des Elfen im Grunde,
Glittst du horchend allzeit in die Runde,
Und doch bezwangst du
Zuletzt mich beim Scheiden
Mit trügenden Eiden
Ja da, da sangst du!

Du schlossst singend
Die irdische Bahn doch,
Du starbst verklingend;
Du warst ein Schwan doch!

—Henrik Ibsen

Ein Traum

Mir träumte einst ein schöner Traum;
Mich liebte eine blonde Maid.
Es war am grünen Waldesraum,
Es war zur warmen Frühlingszeit:
Die Knospe sprang, der Waldbach schwoll,
Fern aus dem Dorfe scholl Geläut'
Wir waren ganzer Wonne voll,
Versunken ganz in Seligkeit.

Und schöner noch, als einst der Traum,
Begab es sich in Wirklichkeit:
Es war am grünen Waldesraum,
Es war zur warmen Frühlingszeit,
Der Waldbach schwoll, die Knospe sprang,
Geläut' erscholl vom Dorfe her;
Ich hielt dich fest, ich hielt dich lang—
Und lasse dich nun nimmermehr!

Nimmermehr! Nimmermehr!
O frühlingsgrüner Waldesraum,
Du lebst in mir durch alle Zeit!
Dort ward die Wirklichkeit zum Traum,
Dort ward der Traum zur Wirklichkeit.

—Friedrich von Bodenstedt

Ich liebe dich

Du mein Gedanke, du mein Sein und Werden!
Du meines Herzens erste Seligkeit!
Ich liebe dich wie nichts auf dieser Erden,
Ich liebe dich, ich liebe dich,
Ich liebe dich in Zeit und Ewigkeit!
Ich denke dein, kann stets nur deiner denken.

Nur deinem Glück ist dieses Herz geweiht:
Wie Gott auch mag des Lebens Schicksal len-
ken.

Ich liebe dich, ich liebe dich,
Ich liebe dich in Zeit und Ewigkeit!

—Hans Christian Andersen

(German by F. von Holstein)

Lys Nat

Var det ej nylig, Solen sank
Ned bag skovene i det Fjerne
Nylig først, at den blege Stjerne
Så sit Billed i Bolgen blank?

Er det alt Dagens Guld, som gryr?
Glider alt Solens Lavastromme
Over de Bjergeholgede Skyr?
Er det forbi med Natens Drømme?

Neppe kommen drager du bort;
Lyse Nat, hvi er du så kort?

Rock me, rock me, O wave so tender,
On the tide!
Fair as a dove, as a young fawn slender
Comes my bride.
Rock, rock in dreams divine,
I am thine and thou art mine.
Now the music is dying!
"Fair, my lady."

A Swan

My swan, my treasure,
With snowy white feather,
Of his songs sang me never
A single measure.

Shyly fearing the elves in the bushes,
Glided he, list'ning there 'mid the rushes,
And yet, when death came
And parting alarmed me,
With sweet song he charmed me,
And song with death came!

And, with its ringing,
His spirit passed on, then,
He died while singing.
Was he only a swan, then?

A Dream

In dreams I had a vision fair;
I wooed a maid with golden hair;
We met in lovely forest glade,
Where spring had spread her verdant shade;
The woodbird sang, the streamlet flow'd,
We heard the distant village chime;
In ev'ry look our rapture glow'd,
Our hearts were held in bliss sublime.

That golden dream was not so fair
As waking joys imparted there:
Again we stood in forest glade,
Where spring had spread her verdant shade;
The streamlet flow'd, the woodbird sang,
A sound of bells the breezes bore;
I held thee fast, I held thee long,
And I shall leave thee nevermore!

Nevermore! Nevermore!
O forest, warm, with sunny beam,
Thro' life thou'rt ever dear to me!
Here did the truth become a dream,
Here dreams became reality.

I Love Thee

Thou art my thoughts, my present and my
future,
Thou art my heart's supreme, its only joy;
I love thee more than any earthly creature,
I love thee, dear, I love thee, dear, I love thee
now and for eternity!

One thought of thee all other thought drives
from me,
Pledged to thy good alone this heart shall be;
For to whatever fate God's will may doom
me,
I love thee, dear, I love thee, dear, I love thee
now and for eternity!

Light Night

Was it not just now that the sun sank
Behind the trees in the forest,
And the pale stars
Shone over the waves?

Is it the day's gold that appears?
Do the sun's beams already
Glide over the mountains?
Are the night's dreams already over?

Just arrived, thou goest away;
Bright night, why art thou so short?

The next song is by Felix Mendelssohn.

Auf Flügeln des Gesanges

Auf Flügeln des Gesanges,
Herzliebchen, trag' ich dich fort,
Fort, nach den Fluren des Ganges,
Dort weiss ich den schönsten Ort;
Da liegt ein rothblühender Garten
Im stillen Mondenschein,
Die Lotosblumen erwarten
Ihr trautes Schwesterlein.

Die Veilchen kichern und kosen,
Und schau'n nach den Sternen empor,
Heimlich erzählen die Rosen
Sich duftende Märchen in's Ohr.
Es hüpfen herbei und lauschen
Die frommen, klugen Gazell'n,
Und in der Ferne rauschen
Des heil'gen Stromes Well'n.

Dort wollen wir niedersinken,
Unter dem Palmenbaum,
Und Lieb' und Ruhe trinken,
Und träumen seeligen Traum.

—Heinrich Heine

The next four songs are by Richard Strauss.

Geduld

Geduld, sagst du und zeigst mit weissem Finger
Auf meiner Zukunft fest geschlossene Thür.
Ist die Minute, die da lebt, geringer,
Als jene ungebor'nen? Sage mir!
Kannst mit der Liebe du den Lenz verschieben,
Dann borg ich dir für eine Ewigkeit.
Doch mit dem Frühling endet auch das Lieben
Und keine Herzensschulden zahlt die Zeit.

Geduld, sagst du, und senkst die schwarze
Locke,
Und stündlich fallen Blumenblätter ab,
Und stündlich foredert eine Totenglocke
Der Träne letztes Fahrgeld für das Grab.
Sieh nur die Tage schnell vorüber rinnen,
Horch, wie sie mahndend klopfen an die Brust,
Mach auf, mach auf, was wir nicht heut' ge-
winnen,
Ist morgen unersetzlicher Verlust.

Geduld, sagst du, und senkst die Augenlider,
Verneint ist meine Frage an das Glück;
So lebe wohl, ich seh dich nimmer wieder,
So will's mein unerbittliches Geschick.
Du hast geglaubt, weil andre warten müssen
Und warten können, kann und muss ich's auch;
Ich aber hab' zum Lieben und zum Küssen
Nur einen Frühling, wie der Rosenstrauch.

—Hermann von Gilm

Zueignung

Ja, du weisst es, theure Seele,
Dass ich fern von dir mich quäle,
Liebe macht die Herzen krank,
habe Dank.

Einst hielt ich, der Freiheit Zecher,
Hoch den Amethysten Becher
Und du segnestet den Trank,
habe Dank.

On Wings of Song

On wings of music roaming,
With thee, my sister, I glide.
Where the gay flowers are blooming
On banks by the Ganges' tide.
O there in a garden of roses,
While moonbeams calmly shine;
The lotusflower unclasp
Her eye to gaze on thine.

The blue-eyed violets lying,
Look up to the stars with delight;
There the muskroses are sighing
Fond secrets, like Fays of the night.
There lightfooted antelopes hiding
Lie crouching ready to leap,
While on, in distance gliding,
The river seeks the deep.

Reclining with thee, while night gleams
Under the spreading palms;
We woo the pow'r of bright dreams,
To shed their heavenly charms.

O Wait!

"O wait!" you say, and point your snow-
white finger
Towards the fast-lock'd portals of my fate.
Shall we not rather ask the hour to linger,
Not hasten those, whose coming we must wait?
Can you, deferring love, bid spring come
later,
Then I will grant you all you ask, and more;
But, ah with spring, love's happy hours are
ended,
And time will ne'er the heart's lost joys re-
store.

"O wait!" you say, those raven locks low
drooping;
Yet hourly from the flow'rs fall leaf and
bloom;
And hourly tolling, hark! the death-bell solemn
Calls forth the tear and opens out the tomb.
Mark how the days of life are hast'ning on-
ward,
Harken their solemn warning to the heart:
"O let us in! for what today we gain not,
Tomorrow's grief nor work can ne'er im-
part."

"O wait!" you say, with downcast eyes and
blushing,
Alas! my lot is seal'd now, and anon
I leave you here, now never more returning,
My unrelenting fate bids me begone!
I know you thought, as others gladly waited;
Fond servile creatures! I, too, would be mis-
led,
I've but one spring for love, for love's sweet
kisses,
But one short springtime, like the rosebush
red.

Devotion

Ah! thou know'st, sweet, all mine anguish,
In thine absence how I languish.
Love brings sorrow to the heart!
Thanks, sweetheart!

Once, when merry songs were ringing,
I to liberty was drinking,
Thou a blessing didst impart,
Thanks, sweetheart!

Und beschworst darin die Bösen,
Bis ich, was ich nie gewesen,
Heilig, heilig an's Herz dir sank,
habe Dank.

—Hermann von Gilm

Cécilie

Wenn du es wüsstest was träumen heisst
Von brennenden Küssen, von Wandern und
Ruh'n
Mit der Geliebten Aug' in Auge und kosend
und plaudernd,
Wenn du es wüsstest, du neigtest dein Herz!

Wenn du es wüsstest was bangen heisst
In einsamen Nächten umschauert vom Sturm,
Da Niemand tröstet milden Mundes die kampfmüde Seele,
Wenn du es wüsstest, du kämest zu mir.

Wenn du es wüsstest was leben heisst
Umhaucht von der Gottheit weltschaffendem
Athem
Zu schweben empor lichtgetragen zu seligen
Höh'n.
Wenn du es wüsstest, du lebstest mit mir!
—Heinrich Hart

Heimliche Aufforderung

Auf, hebe die funkelnde Schaal' empor zum
Mund,
Und trinke beim Freudenmahle dein Herz
gesund.
Und wenn du sie hebst, so winke mir heimlich
zu
Dann lächle ich und dann trinke ich still wie
du.
Und still gleich mir betrachte um uns das Heer
Der trunk'nen Zecher, verachte sie nicht zu
sehr.
Nein, hebe die blinkende Schaal' gefüllt mit
Wein
Und lass beim lärmenden Mahle sie glücklich
sein.
Doch hast du das Mahl genossen, den Durst
gestillt,
Dann verlasse der lauten Genossen fest freudiges
Bild,
Und wandle hinaus in den Garten zum Rosen-
strauch,
Dort will ich dich dann erwarten nach altem
Brauch,
Und will an die Brust dir sinken, eh' du's ge-
hofft,
Und deine Küsse trinken, wie ehemals oft
Und flechten in deine Haare der Rose Pracht
O komm du wunderbare ersehnte Nacht.

—John Henry Mackay

Thou didst lay those wanton spirits;
Comfort, peace my soul inherits,
Joy and bliss shall thy love depart.
Thanks, sweetheart!

Cecily

If you but knew, sweet, what 'tis to dream
Of fond, burning kisses, of wand'ring and
resting
With the below'd one; gazing fondly caress-
ing, and whisp'ring.
Could I but tell you, your heart would assent.

If you but knew, sweet, the anguish of wak-
ing
Through nights long and lonely and rocked
by the storm
When none is near to soothe and comfort the
strife-weary spirit,
Could I but tell you, you'd come, sweet, to
me.

If you but knew, sweet, what living is,
In the creative breath of God, Lord and
Maker to hover,
Upborne on love like pinions to regions of
light.

If you but knew it, could I but tell you, you'd
dwell, sweet, with me.

The Lover's Pledge

Up, lift now the sparkling gold cup to the lip,
and drink!
And leave not a drop in the goblet fill'd full
to the brink.
And as thou dost pledge me, let thine eyes
rest on me,
Then I will respond to thy smile and gaze all
silent on thee.
Then let thy eyes bright wander around o'er
the comrades gay and merry—
O do not despise them, love; Nay! lift up the
sparkling gold goblet
And join the sway. Let them rejoice and be
happy, this festive day.
But, when thou hast drunk and eaten, no
longer stay;
Rise and turn thine eyes from the drinkers,
and hasten away!
And wending thy steps to the garden, where
blush the roses fair,
Come to the sheltering arbour! I'll meet thee
there,
And soft on thy bosom resting let me adore
Thy beauty, drink thy kisses as oft before.
I'll twine around thy fair forehead the roses
white
O come thou wond'rous bliss bestowing, longed
for night!

Records: Franz: *Aus meinen grossen Schmerzen, Widmung*, sung by Ernst Wolff (baritone); Grieg: *Solvejgs Lied*, sung by Elisabeth Schumann (soprano), *Im Kahne, Ein Schwan, Ein Traum, Ich liebe dich, Lys Nat*, sung by Kirsten Flagstad (soprano); Mendelssohn: *Auf Flügeln des Gesanges*, sung by Elisabeth Schumann (soprano); Strauss: *Geduld*, sung by Heinrich Schlusnus (baritone), *Zueignung, Cécilie, Heimliche Aufforderung*, sung by Lauritz Melchior (tenor).

Lesson 28. Easter Program: A Famous Excerpt from Parsifal. April 6, 1939

Program Notes: Richard Wagner (1813-1883) was the greatest of opera composers. Altho his operas do not contain much action and sometimes have rather cumbersome plots, they are universally conceded to contain better music than the operas of any other composer. A portion of a Wagnerian opera may be played at a concert with a Bach choral work, a Beethoven or Brahms symphony, or some other composition of the highest order,

and not suffer by comparison—something hardly possible with more than an occasional excerpt from the operas of other writers.

Gurnemanz:

(Schüttet das Fläschchen vollends auf Parsifa's Haupt aus, reibt, dieses sanft, und faltet dann die Hände darüber).

So ward es uns verhiessen,
So segne ich dein Haupt,
Als König dich zu grüssen.

Du—Reiner!—

Mitleidvoll Duldender,
Heilthatvoll Wissender!

Wie des Erlös'ten Leiden du gelitten,
Die letzte Last entnimmt nun seinem Haupt.

Parsifal:

(Schöpft unvermerkt Wasser aus der Quelle, neigt sich zu der voihm noch knienden Kundry, und netzt ihr das Haupt).

Mein erstes Amt verricht' ich so:—

Die Taufe nimm,
Und glaub' an den Erlöser!

(Kundry senkt das Haupt tief zur Erde und scheint heftig zu weinen).

Parsifal:

(Wendet sich um, und blickt mit sanfter Entzückung auf Wald und Wiese).

Wie dünkt mich doch die Aue heut' so schön!

Wohl traf ich Wunderblumen an,
Die bis zum Haupte süchtig mich umrankten;
Doch sah ich nie so mild und zart
Die Halmen, Blüthen und Blumen,
Noch duftet' All' so kindisch hold
Und sprach so lieblich traut zu mir.

Gurnemanz:

Das ist Char-Freitags-Zauber, Herr!

Parsifal:

O wehe, des höchsten Schmerzenstag's!
Da sollte, wahn' ich, was da blüh't,
Was athmet, lebt und wieder lebt,
Nur trauern, ach! und weinen.

Gurnemanz:

Du sieh'st, das ist nicht so.
Des Sünders Reuethränen sind es,
die heut' mit heiligem Thau
beträufet Flur und Au':
der liess sie so gedeihen.
Nun freu't sich alle Kreatur
auf des Erlösers holder Spur
will ihr Gebet ihm weihen.

Ihn selbst am Kreuze kann sie nicht erschauen,
Da blickt sie zum erlös'ten Menschen auf;
Der fühlt sich frei von Sündenlast und Grauen,
Durch Gottes Liebesopfer rein und heil:
Das merkt nun Halm und Blume auf den Auen,
Dass heut' des Menschen Fuss sie nicht zertritt,
Doch wohl, wie Gott mit himmlischer Geduld
Sich sein' erbarmt' und für ihn litt,
Der Mensch auch heut' in frommer Huld
Sie schonnt mit sanftem Schritt.
Das dankt dann alle Kreatur,
Was all' da blüht und bald erstirbt,
Da die netsündigte Natur
Heut' ihren Unschulds-Tag erwirbt.

Gurnemanz:

(Empties the flask completely over Parsifa's head, rubs it gently, and folds his hands over it).

Aye, thus it was foretold me,
My blessings on thy head:—
Our king indeed behold we.

Thou—pure one—

Allpitying sufferer,
Allknowing rescuer!

Thou who the sinner's sorrows thus hast
suffered,
Assist his soul to cast one burden more.

Parsifal:

(Scoops up some water from the spring, unperceived, bends down to the kneeling Kundry and sprinkles her head).

I first fulfil my duty thus:—

Be thou baptized,
And trust in the Redeemer!

(Kundry bows her head to the earth and appears to weep bitterly).

Parsifal:

(Turns round and gazes with gentle rapture on the woods and meadows).

How fair the fields and meadows seem today!

Many a magic flow'r I've seen,
Which sought to clasp me in its baneful
twinnings;

But none I've seen so sweet as here;
These tendrils bursting with blossom,
Whose scent recalls my childhood's days
And speaks of loving trust to me.

Gurnemanz:

That is Good-Friday's spell, my lord!

Parsifal:

Alas, that day of agony!
Now surely everything that thrives,
That breathes and lives and lives again,
Should only mourn and sorrow?

Gurnemanz:

Thou see'st, that is not so.
The sad repentant tears of sinners
Have here with holy rain
Besprinkled field and plain,
And made them glow with beauty.
All earthly creatures in delight
At the Redeemer's trace so bright
Uplift their pray'rs of duty.

To see Him on the Cross they have no power:
And so they smile upon redeemed man,
Who, feeling freed, with dread no more doth
cower,

Through God's love-sacrifice made clean and
pure:

And now perceives each blade and meadow-
flower

That mortal foot to-day it need not dread;
For, as the Lord in pity man did spare,

And in His mercy for him bled,
All men will keep, with pious care,
To-day a tender tread.

When thanks the whole creation makes,
With all that flow'rs and fast goes hence,
That trespass-pardoned Nature wakes
Now to her day of Innocence.

Parsifal was Wagner's last opera, being completed in 1882, one year before his death. It has a religious plot, and since the third act takes place on Good Friday, the opera is often performed during Holy Week. The Good Friday music from the third act is one

of the best parts of the work, and ranks with the best music Wagner composed, altho some of the other portions of *Parsifal* are apt to be dull. The text for the excerpt to be heard on this program is given above.

Records: Wagner: Good Friday Music from Act III of *Parsifal*, performed by Fritz Wolff (tenor), Alexander Kipnis (bass), and the Bayreuth Festival Orchestra conducted by Siegfried Wagner.

MUSIC WHICH TELLS A STORY—PROGRAM MUSIC

Lesson 29. Johann Kuhnau and Wolfgang Amadeus Mozart. April 13, 1939

Program Notes: Johann Kuhnau (1660-1722) is almost lost in obscurity today, but at one time he was a famous man. He was a predecessor of Johann Sebastian Bach in the post of cantor of St. Thomas Church in Leipzig, and only outstanding figures in the world of music have occupied that position. Included among Kuhnau's music was a set of six *Biblical Sonatas* composed in 1720, which were based on Biblical stories. The sonata we shall hear is entitled, *The Combat Between David and Goliath*, and the program supplied by the composer is as follows:

- (1) Goliath's bravado.
- (2) Fear and Prayer of the Israelites—chorale.
- (3) David's courage, his ardent desire to destroy the enemy's arrogance, and his faith in God.
- (4) The combat, the stone is hurled, and Goliath is overthrown.
- (5) The flight of the Philistines and their pursuit.
- (6) Triumph of the Israelites, the women's fanfares in David's honor.
- (7) General dancing and rejoicing.

We should realize that it was very unusual for a composer to provide a program for his music at the time when Kuhnau lived. The term "sonata" as applied to this work does not mean that it follows the outlines of the sonata given elsewhere in this bulletin. The performance of this work utilizes a clavichord, one of the keyboard instruments preceding the modern piano. Space forbids a discussion of the clavichord, but those listeners who are interested are referred to page 22 of *A Radio Course in Music Appreciation* for the season of 1937-38.

The *Sextet in F* for string quartet and two French horns (*A Musical Joke*), by Wolfgang Amadeus Mozart (1756-1791), is one of its composer's lesser works. It was written in June, 1787, probably for performance at some social gathering where music of a light and humorous character was required. The work is not strictly program music, since it tells no definite story. In it a number of the hard and fast rules of composition are violated, the melody is sometimes given to the instrument least fitted to play it, and at times the effect is that of a poor group of instrumentalists doing a bad job with a good piece. The work derives its humorous qualities from the musical sins Mozart purposely committed when composing it.

Records: Kuhnau: *Biblical Sonata: Combat Between David and Goliath*, played by Erwin Bodky (clavichord); Mozart: *Sextet in F*, K. 522, played by the Kolisch String Quartet with Domenico Caputo and John Barrows (horns).

Lesson 30. Les Préludes, by Franz Liszt. April 20, 1939

Program Notes: Franz Liszt (1811-1886) gained fame originally as a pianist, and he is usually considered as the most famous pianist who ever lived. He devoted much of his time to composition, however, and altho many of his works were written merely to display his own wizardry as a pianist, he made some definite contributions to creative music, especially through his development of the symphonic poem. His compositions included twelve of these, of which *Les Préludes* is the most frequently performed. To us there is nothing

startling in the idea of a composition attempting to tell a story suggested by an extra-musical text, but when composers first began to do that sort of thing, the procedure was bitterly opposed. As we have seen in our programs dealing with musical form, compositions of such men as Bach, Haydn, Mozart, and Beethoven, did not tell stories—that is, were not “program music,” even tho such exceptions as the *Beethoven Pastoral Symphony* did exist. Even this work, however, followed certain definite rules in its treatment of themes. But Liszt, like Berlioz in his *Symphonie Fantastique*, put aside considerations of musical form, and in his symphonic poems (the term was invented by Liszt) let the story dictate the sequence of themes and their treatment. Musical development—of a high order too—was often present in his works, but formal rules were thrown aside. As might be expected, this brought down upon Liszt the wrath of the conservative musicians of his day.

Les Préludes, the third of Liszt’s symphonic poems, is based on one of the *New Poetic Meditations* by Lamartine, but the music was not originally conceived with that in mind. In 1844 Liszt began to compose choral music for a poem by Aubrey, the work to be entitled *The Four Elements*, but he found the poem uninteresting, and so put the music aside, uncompleted. Ten years later he decided to change and enlarge the music, and to adapt it to one of Lamartine’s *Méditations*.

The French writer, Alphonse Lamartine, was a contemporary of Liszt. During his varied career he wrote poetry and history, worked in the diplomatic service, and took part in the revolution of 1848 in France. His *Nouvelles Méditations Poétiques* was a collection of philosophical poems. The quotation which Liszt gave in his score with the comment “After Lamartine,” is a condensation of the principal ideas found in the fifteenth poem of the set, bearing the title “*Les Préludes*,” which was dedicated to Victor Hugo. Liszt’s version differs from the original poem in several respects, and does not quote Lamartine exactly except for the expression, “the trumpet’s loud clangor has called him to arms,” which, in the copy below, is enclosed in single quotation marks. Liszt even changed the sequence of Lamartine’s ideas. However, the general tenor of Liszt’s version is the same, and we are fortunate in the fact that he condensed Lamartine’s much longer poem into more easily assimilated prose. The Liszt paraphrase is given as it is found in the score:

“What is our life but a series of preludes to that unknown song, the first solemn note of which is sounded by death? Love forms the enchanted daybreak of every life; but what is the destiny where the first delights of happiness are not interrupted by some storm, whose fatal breath dissipates its fair illusions, whose fell lightning consumes its altar? And what wounded spirit, when one of its tempests is over, does not seek to rest its memories in the sweet calm of country life? Yet man does not resign himself long to enjoy the beneficent tepidity which first charmed him on Nature’s bosom; and when ‘the trumpet’s loud clangor has called him to arms’ he rushes to the post of danger, whatever may be the war that calls him to the ranks, to find in battle the full consciousness of himself and the complete possession of his strength.”

Les Préludes has two themes, each of which undergoes considerable transformation in the course of the composition. The fundamental notes of the first theme are given in example 1. Below them are shown six of the more important transformations in which the theme appears in the course of the music. These have been numbered to facilitate reference to them during the broadcast. If these six developments are compared with example 1, it will be easy to see that they all contain the same notes, even tho they differ from each other in character, rhythm, and key. During the broadcast these points will be illustrated, but it is suggested that the listener play or sing these themes until they are familiar, so that the explanation given over the air will be more easily grasped.



2 *Andante*
pp

3 *Andante maestoso*
ff sf

4 *L'istesso tempo*
p

5 *Allegro tempestuoso*
ff

6 *Dolce espressivo*

7 *Allegro marziale*
ff

The other theme for *Les Préludes* follows, designated A.

A *L'istesso tempo*
Dolce

Records: Liszt: *Les Préludes*, played by the Philadelphia Symphony Orchestra conducted by Eugene Ormandy.

Lessons 31 and 32. Twelve Preludes, by Claude Debussy. April 27 and May 4, 1939

Program Notes: The term "prelude" is applied to several types of musical compositions which are not at all similar. In its strictest sense, of course, a "prelude" is an introductory movement for a play, an opera, or a longer instrumental work. Wagner used the term in place of the word "overture" in some of his later operas, because he wished to emphasize the close relationship between the orchestral introduction and the opera which was to follow. In the case of the Liszt symphonic poem, *Les Préludes*, the title is derived from the Lamartine poem with which the music is associated. Chopin, whose twenty-four *Preludes* were used on this series in 1936-37, applied the term to a collection of unfinished sketches and fragments which he had jotted down from time to time intending to work them later into more extensive compositions. The *Preludes* of Debussy are based on the Chopin pattern in that they are free in form, and rather improvisatory in character, but the Debussy *Preludes*, unlike those by Chopin, are completed compositions, not unfinished fragments; the affinity of the two men's works bearing this title is entirely spiritual in character.

Claude Debussy (1862-1918) was the leader of the Impressionistic Movement in music, and the *Preludes* are typical of his style. Like such things as Romanticism, Impressionism

is difficult to define. Perhaps a comparison of music and painting will help to explain Impressionism. An impressionistic painting does not attempt to describe a detailed scene as much as to record the artist's personal reactions to that scene. In the same way, impressionistic music describes the mood induced by some object, not the object itself. Quotations from Debussy's writings illustrate this. Debussy, himself a nature lover, said that "of all the arts, music is closest to nature. . . . To musicians only is it given to capture all the poetry of night and day, of earth and heaven, to reconstruct their atmosphere and record the rhythm of their great heart-beats." "Music is the expression of the movement of the waters, the play of curves described by changing breezes." He stated that the man who will "listen to the thousand sounds with which nature surrounds us," and will portray this in his music, "will be a great man." As we might expect, Debussy's music is elusive, vague, and dreamy. Music, he thought, must portray a beautiful illusion; if it becomes too definite it becomes commonplace.

Debussy wrote two books of *Preludes*, each comprising twelve compositions. These are his principal piano works. The first set, which we shall hear on these programs, was composed in 1910. Each of the *Preludes* was given a title, but Debussy adopted the unusual procedure of placing the names at the end of each of the pieces, instead of at the beginning. He may have wanted us to guess at the titles, or perhaps he feared we should be distracted if we had verbal guides when hearing the music. However, he left no further indication of the things he had in mind; there is no program, no explanation.

Alfred Cortot, the famous French pianist who made the recordings we shall hear on these programs, has written an essay on "The Piano Music of Claude Debussy," in which he gives the impressions which the *Preludes* convey to him. His comments are quoted below; it is interesting to follow Cortot's descriptions as we hear him play, but we must remember that they were not authorized by the composer.

1. *Danseuses de Delphes.* (*Greek Dancers.*) Greek maidens turn and pass, grave and silent, to the slow rhythm of harps, timbrels, and flutes. And in the mysterious shadow of the temple, heavy with the fragrant rising spirals of holy incense, is the invisible presence of a god wrapped in a tranquil dream of destiny.

2. *Voiles.* (*Sails.*) Boats lie at anchor in the shining port. Their sails flutter idly, and on the breeze which stirs them sweeps the flight of white wings over the crooning sea towards the horizon bright with the setting sun.

3. *Le Vent dans la plaine.* (*The Wind in the Plain.*) The breeze flashes over the short grass, stirs the bushes, and the hedges cover before it; now and then in the young glory of the morning the corn bows in a long undulating wave before the onslaught of a fiercer gust.

4. *Les sons et les parfums tournent dans l'air du soir.* (*Sounds and perfumes drift in the evening air.*) Here is the languid distress of the dying day, when perfumes wander in the air's caress, and the confused vibrations in the atmosphere are gathered up by the advancing night; and—to keep to the meaning of Baudelaire's epigraph—all the sensuous intoxication of a swooning heart—to what end?

5. *Les collines d'Anacapri.* (*The Hills of Anacapri.*) Movement in the bright morning, and a glimpse of the hills around Naples bathed in sunshine; the vivid rhythm of a tarantella unfolding to a careless popular refrain, the delicious age-old longing of an amorous melody vibrating in the brazen sky, jarring against the persistent and piercing note of a flute.

6. *Des pas sur la neige.* (*Footprints on the Snow.*) Over the melancholy frozen ground of a winter landscape which Debussy summons up in sound before us, footprints linger still when the absent friend has gone, and each one awakens the sad memory of a joy no more.

7. *Ce qu'a vu le vent de l'Ouest.* (*What the West Wind Saw.*) Through the luminous pallor of the dawn, or in the night's terror, is hurled the fearful vision of a hurricane; and over the angry sea, cries of agony are thrown back by the waves.

8. *La Fille aux cheveux de lin.* (*The Girl with the Flaxen Hair.*) This is a tender paraphrase of the Scottish song of Lecote de Lisle, singing the charm and sweetness of his distant love, "sitting all among the flowering lucern-grass."

9. *La Sérénade interrompue.* (*The Interrupted Serenade.*) A mocking nocturnal fantasy in the manner of Goya, expressing the diffident passion of a "Novio," his love-songs under a closed window, his timid, peevish agitation at an unexpected sound, or at the passing of a band of noisy students, in a street near by; heard above a swaying, sinuous thrumming of a guitars, in a rhythm that throbs already through the pages of *Iberia*, [an orchestral work by Debussy].

10. *La Cathédrale engloutie.* (*The Engulfed Cathedral.*) An old Breton tale goes that once in a while in the clear morning light, when the sea is transparent, the Cathedral of Ys, sleeping its enchanted sleep under the waves, rises from the depths of the ocean and of antique time. The bells chime slowly, we hear the priests solemnly intoning, and the illusion sinks again below the rocking sea.

11. *La Danse de Puck.* (*The Dance of Puck.*) In whimsical swiftness and airy mockery, this quicksilver spirit from Shakespeare flits about in play, vanishing and reappearing, amusing himself by teasing some country bumpkin, or tormenting a pair of lovers, then in a flash is gone.

12. *Minstrels.* (*Minstrels.*) This is a witty and jocular picture of the atmosphere of the music-hall. English clowns appear and tumble on the stage in clumsy attitudes, and gusts of sensuous music suggest the idle pleasure of an evening's amusement.

Records: Debussy: Book I of the *Preludes*, played by Alfred Cortot (piano).

MUSIC BY BACH, BEETHOVEN, BRAHMS, AND WAGNER

Lesson 33. The Coffee Cantata, by Johann Sebastian Bach. May 11, 1939

Introduction: We shall conclude the Music Appreciation Series for this year with several broadcasts of music by the four greatest composers—Bach, Beethoven, Brahms, and Wagner. It was Hans von Bülow, the gifted conductor, composer, pianist, and critic of the nineteenth century, who is usually credited with originating the famous expression, "The Three B's of Music—Bach, Beethoven, and Brahms." To this great trio is often added the name of the greatest of opera composers, Richard Wagner, who deserves to be spoken of in the same sentence with the "B's." Our last six programs will present interesting examples of the music of these four men. Bach, who is better known for his serious instrumental works and his church cantatas, is represented by his distinctly humorous *Coffee Cantata*. Beethoven is represented by a concert aria and a string quartet, Brahms by his great *Fourth Symphony*, and Wagner by the inspired pages of the Good Friday Music from *Parsifal*.

Program Notes: The text for the Bach Cantata is given on pages 16 and 17 of this bulletin.

Records: Bach: *Coffee Cantata*, performed by Ethyl Hayden (soprano), William Hain (tenor), Benjamin De Loache (baritone), and an Instrumental Ensemble directed from the Harpsichord by Ernst Victor Wolff.

Lesson 34. Ah, Perfido! by Ludwig van Beethoven. May 18, 1939

The text for the Aria: *Ah, Perfido!* is given on page 18.

Records: Beethoven: *Ah, Perfido!* Opus 65, performed by Kirsten Flagstad (soprano) with the Philadelphia Symphony Orchestra conducted by Eugene Ormandy.

Lesson 35. The Quartet in F Major, Opus 135, by Ludwig van Beethoven. May 25, 1939

Program Notes: The *Quartet in F Major*, Opus 135, was the last complete work from Beethoven's pen prior to his death. Yet it is not a typical "last period composition." In explanation of this statement it should be pointed out that commentators on Beethoven's music usually divide his composing into three chronological periods. The first-period works are those Beethoven wrote when a young man; as might be expected, these are much like the music of the composers who preceded him, whose compositions he took for models. Of the nine symphonies, the first two fall into this period, and of the sixteen quartets, the six in Opus 18 are first-period works. Later Beethoven's originality asserted itself, and he boldly set out along new paths; here is the mature Beethoven. Most of his music which we hear today was written in this so-called second period. Later in life Beethoven became still more original, more mature psychologically, and more highly skilled in the technique of composition. The works of this third, or last, period, including the *Ninth Symphony*, several piano sonatas, and some string quartets, are recognized as his greatest, altho they are not so easily grasped as are his middle-period compositions. Altho Opus 135 is the last of his quartets, it is not a typical third-period work; it is less profound than are most of the works of the period, and perhaps for that reason, easier to enjoy. (An explanation of the term "opus" is given at the conclusion of this program note.)

This composition is shorter than any of his other complete quartets except for one of his very earliest. The only available explanation for this is hardly in keeping with the factors which usually control the music of a great master. It seems that Beethoven had bargained with a publisher for a certain sum in payment for this quartet, and was disappointed when he received a smaller amount. Accordingly, so he told a friend: "If a Jew sends amputated ducats, he shall have an amputated quartet. That's why it's so short."

This quartet contains the conventional four movements, whereas most of his other last period works were irregular in this respect, ranging from piano sonatas with two move-

ments, to quartets with seven. The first movement, marked *Allegretto*, is a straight forward affair, which is immediately attractive. The second movement, *Vivace* is the scherzo of the quartet, altho it is not marked that way. It is gay and infectious music. The third and shortest movement is the slow movement, *Lento assai, cantante e tranquillo*. Altho the last movement has a slow introduction, the main section is a fast *Allegro*.

One feature of the fourth movement has given rise to more speculation than all the rest of the quartet put together. Before the movement proper, Beethoven wrote the two themes which figure most prominently in the music, supplying them with a title and comments as in the example below. The translations given here, were not, of course, in the original.)

Der schergefasste Entschluss (The Difficult Resolution).



Muss es sein?
(Must it be?)

Es muss sein!
(It must be!)

Es muss sein!
(It must be!)

At first one is tempted to apply some profound philosophical explanation to this; perhaps Beethoven, nearing the end of his life, foresaw his death. Actually the thing appears to have come about as a joke. One explanation is that this referred to the weekly ordeal occurring when Beethoven's housekeeper asked him for the rent. Beethoven, in a poor financial state as usual, would ask her, "Must it be?," to which she would invariably reply, "It must be!" but the actual situation appears to have been somewhat different. A friend of Beethoven, Demscher, having fallen out of the master's good graces, asked a mutual acquaintance what he should do in order to put himself into a position to borrow some music from Beethoven. The friend replied that he should send a certain sum of money to the man at whose home the work was first played; he thus would appease Beethoven, who was angry because Demscher had failed to give financial support to the first performances of the composition. Demscher laughingly asked, "Must it be?" to which the answer came, "Yes, it must be. Out with the purse!" When Beethoven heard about this, he was greatly amused, and wrote a little canon (round) setting those words to music. Later, when he came to write the last movement of this quartet, he used the two themes which he had employed in the canon. In the quartet, the music for "Must it be?" serves as the basis for the slow introduction to the last movement, while the music for "It must be!" is the main theme of the gay *Allegro* which forms the main portion of the movement. It is interesting to notice that the theme for "Must it be?" is identical with that used by Liszt to open *Les Préludes*, and by César Franck to begin his *Symphony in D Minor*. We may dismiss this as a mere coincidence, however.

The word "opus" is the Latin *opus*, meaning a work or a composition. Most composers since 1800 have numbered their pieces as they have published them, as Opus 1, Opus 2, etc. These numbers are assigned for purposes of identification. Sometimes several compositions are published at the same time as different parts of the same opus, while on other occasions the same works might be assigned separate numbers. There seems to be no uniformity about this. Thus there are six quartets in Beethoven's Opus 18, and three in his Opus 59. The fact that there are three quartets in Opus 59 while there is only one composition in Opus 74, does not mean that each of the three works is less important than the one which has a number all to itself; the opus numbers have no significance beyond their service in definitely identifying the pieces to which they are assigned.

One should remember that selections are numbered in the order of their publication, not in order of composition. Usually music is published as it is written, but sometimes a piece may be withheld for years before being released. Therefore relative opus numbers are not an infallible guide to the period in a man's life when certain music was created.

The earlier composers did not assign opus numbers to their works. In fact they were generally careless in identifying their music. Beethoven, Chopin, Schubert, Schumann, Brahms, Liszt, and most other men writing after 1800 used this system. Mozart did not use it, but over half a century after his death Ludwig Köchel cataloged his works, and Köchel's system, several times revised, is used today. Mozart's compositions are referred to by their Köchel numbers, hence are identified as "K. 522" (the number for the Sextet in F used on these programs), and so on.

Records: Beethoven; *Quartet in F Major*, Opus 135, played by the Lener Quartet.

Lessons 36 and 37. Symphony Number Four by Johannes Brahms.

June 1 and 8, 1939

Program Notes: The outstanding composition on the music appreciation programs this year is the Brahms *Fourth Symphony*. Johannes Brahms (1833-1897) is one of the immortals of music. Because he was so severely critical of himself, Brahms did not produce as much music as did some of the other great composers, but for that very reason almost all of his works are masterpieces. He wrote and destroyed twenty string quartets before completing one which he thought worthy of publication. He was in his forties before he gave the first of his four symphonies to the world, altho he had been working on it for years. For this reason, it ranks with his other mature works, instead of being a youthful attempt such as even great Beethoven gave us in the first of his famous nine symphonies. All four of Brahms' major symphonic works are masterpieces, and few critics would attempt to rank them as to merit; to no other composer producing several symphonies can such a compliment be paid.

The *Fourth Symphony* was written during the summers of 1884 and 1885. The period of its actual composition was marked by no unusual events in Brahms' life. He appears, however, to have had misgivings about the reception of his new symphony. He feared it too heavy for public consumption, and was especially concerned about the last movement, the famous passacaglia, which later came to be regarded as the crowning glory of the work. The results, when he submitted the music to some of his friends, prior to its initial public presentation, were not reassuring. Eduard Hanslick, the famous critic, remarked that the first movement reminded him of "two enormously clever people cudgelling each other." Max Kalbeck, another critic, who subsequently produced ten volumes on Brahms, pleaded with him to withhold the work from the public in order to save himself from a conspicuous failure. Brahms himself wrote to Hans von Bülow, the famous conductor, who collaborated with him in the first performance of the symphony: "I have often . . . had a pleasing vision of rehearsing it [the symphony] with you . . . a vision that I still have, although I wonder if it will ever have any other audience!"

Despite this decidedly discouraging outlook, the symphony proved a distinct success at its initial performance on October 25, 1886. Brahms conducted, altho the orchestra had been drilled by von Bülow at most of the rehearsals. The audience tried to obtain a repetition of the third movement, and at the conclusion of the work broke into an enthusiastic demonstration. During a three-week tour which began the following week, the symphony was played to many appreciative audiences. Leipzig, Hamburg, and other cities applauded the new work, but Brahms' own Vienna was more reserved in its reception, altho the master's other symphonies had been well established in the repertoire there.

Later this symphony gave Vienna its last opportunity to pay homage to Brahms. On March 7, 1897, the Vienna Philharmonic Orchestra played the work. Brahms was present—and it proved his last public appearance. He had been ailing for some years, and within a month was to die of cancer. The audience at that concert knew that Brahms would soon be gone, and he realized that they were aware of his state of health. Hanslick, the same man who eleven years before had predicted failure for the symphony, left a moving description of the scene:

"They started with Brahms' *Fourth Symphony* in E Minor. Immediately after the first movement a storm of applause arose, so continuous that Brahms had at last to come

forward from the back of the directors' box and bow his acknowledgment. This ovation was repeated at the end of all four movements, and after the finale, it simply would not stop. A thrill of awe and painful sympathy ran through the whole assembly, a clear presentment that they were greeting the suffering and beloved master for the last time in this hall."

Even more moving is the description of the scene left by Brahms' biographer, Florence May, who wrote, that following the completion of the work,

"The applauding, shouting house, its gaze riveted on the figure standing in the balcony, so familiar and yet in present aspect so strange, seemed unable to let him go. Tears ran down his cheeks as he stood there, shrunken in form, with lined countenance, strained expression, white hair hanging lank; and through the audience there was a feeling as of a stifled sob, for each knew that they were saying farewell. Another outburst of applause and yet another; one more acknowledgment from the master; and Brahms and his Vienna had parted forever."

The first movement of the symphony is in the sonata form usually employed for the first movements of cyclical works. (The sonata form is discussed in the program notes on page 4 of this bulletin.) The principal theme of the movement is stated at the very outset.

Allegro non troppo



The secondary theme is introduced vigorously with four bars which Brahms indicated should be played "marcato"—that is, "marked." Growing from this is a sweeping theme given to the cellos and French horns:



The development section is based mainly on the first theme and the first four measures of the second. The recapitulation is conventional. The movement is concluded by a coda which presents a forceful version of the principal theme.

The second movement is based upon two themes which alternate with each other. The first enters in the fifth measure, and is played by the clarinet:

Andante moderato



The second theme is a broad, virile one, of decidedly melodious character:



Altho usually the last movement is designated as the most important one, Philipp Spitta, the eminent musical scholar, wrote that the second movement "does not find its equal in the symphonic world." Our now famous contemporary, Richard Strauss, was the assistant conductor of the orchestra which gave the premier of the symphony, and was present at the first rehearsal of the work. He was much impressed with the music, and wrote that the second movement reminded him "of a funeral procession moving in silence across moonlit heights."

The reflective mood of the second movement is abruptly dispelled by the vigorous third section. In a flippant mood, Brahms once wrote that "the Scherzo is fairly noisy with three tympani, triangle and piccolo." This movement corresponds to the scherzo which Beethoven introduced into his symphonies. Altho it is not marked that way in the score, we have Brahms' application of the term in the letter just quoted. Here is the energetic opening theme:



A second theme, in quiet, contrasting vein, is also used:



The last movement is a masterpiece of musical form in which Brahms' musical inspiration reaches its very heights. Because it was a passacaglia, the composer and some of his close friends feared that this part of the symphony would prove a failure; in a letter to a friend, Brahms said: "I question whether you will have the patience to sit through the Finale." But his fears proved unfounded, and the last movement made its mark immediately.

This movement is a passacaglia or chaconne. (For our purposes, the chaconne and passacaglia may be considered as the same thing; the experts do not agree among themselves as to the distinctions between the two.) The four most famous examples of this form have been provided by Bach and Brahms. Bach gave us the *Passacaglia in C Minor* for organ, the *Goldberg Variations* for harpsichord, and the chaconne movement of his *Partita in D Minor* for solo violin; Brahms is represented by the last movement of this symphony. In the course of the last few years, these programs have included the three

Bach passacaglias, so that regular listeners should already know the passacaglia as a type of theme and variations. It was pointed out in the description of the second movement of the Tschaikowsky *Trio in A Minor* (page 14) that in an ordinary theme and variations, the variations are based on the melody of the theme, and that they consist of repetitions of the original melody with the introduction of changes. But the variations in a passacaglia follow a different procedure. The theme is repeated in practically its original form, usually being assigned to the bass, while elaborations are given to the the other parts. Usually the theme is kept in the bass, but there are exceptions. This is best understood through the presentation of examples. The theme which Brahms used in his *Fourth Symphony* is given below. (It bears a striking resemblance to the chaconne theme in the one hundred fiftieth church cantata of Bach, and some authorities suggest that Brahms took it directly from there.)



This theme is the basis for over thirty variations, which follow each other without any intervening material. In the first variation, the theme is in the violins, *pizzicato*. The theme notes at first may seem to be only unimportant accompaniment figures. In the second variation, the parts assigned to the wood-winds are apt to attract all of our attention, but the theme is there, again plucked by the strings. Others of the variations will be analyzed during the broadcasts on which this movement is played. Altho only a master could compose such a movement as this one, none of us will find it especially difficult to follow the theme through most of its treatments, even tho we may not always appreciate the skill with which Brahms constructed his many variations. As an example of musical form, this is a creation of the very first rank, yet the greatness of the movement is not alone in its form, but also in its musical inspiration.

Records: Brahms: *Symphony Number 4 in E Minor*, Opus 98, played by the British Broadcasting Corporation Symphony Orchestra, conducted by Bruno Walter.

Lesson 38. The Good Friday Music from Parsifal, by Richard Wagner. June 15, 1939

The Music Appreciation Series will be concluded with this excerpt from Wagner's *Parsifal*. The text for the music is given on page 24.

Records: Wagner: *Good Friday Music from Act III of Parsifal*, performed by Fritz Wolff (tenor), Alexander Kipnis (bass), and the Bayreuth Festival Orchestra conducted by Siegfried Wagner.

RECORD LIST

This list supplies information regarding most of the records used on the broadcasts. When a record is used only incidentally, as in the lessons on orchestral instruments, it is not included here.

- Bach.** Coffee Cantata. Seven sides. (Eighth side has Tobacco Song, by Bach.) Ethyl Hayden (soprano), William Hain (tenor), Benjamin De Loache (baritone), and the Instrumental Ensemble directed from the Harpsichord by Ernst Victor Wolff. Four 12" records. Musicraft Album No. 5. \$6.50.
- Beethoven.** Ah, Perfido!, Opus 65. Four sides. Kirsten Flagstad (soprano), and the Philadelphia Orchestra conducted by Eugene Ormandy. One 12" and one 10" record. Victor Set M-439. \$4.00.
 Quartet in F Major, Opus 135. Six sides. Lener Quartet. Three 12" records. Columbia Set 307. \$5.00.
- Brahms.** Sonata in E \flat Major, Opus 120, No. 2. Six sides. William Primrose (viola) and Gerald Moore (piano). Three 12" records. Victor Set M-422. \$6.50.
 Symphony No. 4 in E Minor, Opus 98. Ten sides. Bruno Walter and the British Broadcasting Corporation Symphony Orchestra. Five 12" records. Victor Set M-242. \$7.50.
- Debussy.** Twelve Preludes, Book One. Twelve sides. Alfred Cortot (piano). One 12" and five 10" records. Victor Set M-480. \$9.50.
- Franz.** Aus meinen grossen Schmerzen. Part of one side. (Record also contains five other short Franz songs.) Ernst Wolff (baritone) with self-accompaniment. One 12" record. Columbia 68501D. \$1.50.
 Widmung. Part of one side. (Record also contains three other short Franz songs.) Ernst Wolff (baritone) with self-accompaniment. One 12" record. Columbia 68503D. \$1.50.
- Grieg.** Ein Traum and Ich liebe dich. Two sides. Kirsten Flagstad (soprano) with Edwin McArthur (piano). One 10" record. Victor 1804. \$1.50.
 Im Kahne. One side. (Reverse has Der gynger en Bat pa Bolge, by Grieg.) Kirsten Flagstad (soprano) with Edwin McArthur (piano). One 10" record. Victor 1813. \$1.50.
 Lys Nat, and Ein Schwan. Two sides. Kirsten Flagstad (soprano) with Edwin McArthur (piano). One 10" record. Victor 1814. \$1.50.
 Solvejgs Lied. One side. (Reverse has Cradle Song, by Smetana.) Elisabeth Schumann (soprano). One 10" record. Victor 1839. \$1.50.
- Kuhnau.** Biblical Sonata: Combat Between David and Goliath. Two sides. Erwin Bodky (clavichord). AS-3 in Anthologie Sonore, Volume 1. One 12" record. \$2.00.
- Liszt.** Les Préludes. Four sides. Philadelphia Symphony Orchestra conducted by Eugene Ormandy. Two 12" records. Victor Set M-453. \$4.50.
- Mendelssohn.** Auf Flügeln des Gesanges. One side. (Reverse has Immer leiser wird mein Schlummer, by Brahms.) Elisabeth Schumann (soprano) and orchestra conducted by L. Rosenek. One 10" record. Victor 1837. \$1.50.
- Mozart.** Sextet in F for Strings and Horns. (Dorfmusikanten.) Four sides. Kolisch Quartet, with Domenico Caputo and John Barrows (horns). Two 12" records. Victor Set M-432. \$4.50.
- Strauss.** Geduld. One side. (Reverse has Morgen, by Strauss.) Heinrich Schlusnus (baritone) and Franz Rupp (piano). One 10" record. Brunswick 35031. \$1.00.
 Zueignung, Cäcilie, and Heimliche Aufforderung. Two sides. Lauritz Melchior (tenor) and Ignace Strassfogel (piano). One 10" record. Victor 1853. \$1.50.
- Tschaikowsky.** Trio in A Minor, Opus 50. ("To the Memory of a Great Artist.") Eleven sides. Hephzibah Menuhin (piano), Yehudi Menuhin (violin), and Maurice Eisenberg (cello). Six 12" records. Victor Set M-388. \$11.00.
- Wagner.** Parsifal—Good Friday Music. Three sides. (Fourth side has Siegfried Forest Murmurs, by Wagner.) Fritz Wolff (tenor), Alexander Kipnis (bass) and the Bayreuth Festival Orchestra, conducted by Siegfried Wagner. Two 12" records. Columbia 67370D and 67371D. \$1.50 each.

Tuesday, December 13

Auditorium, Green Hall

- 9:00 Seed-borne diseases and their control, *M. B. Moore*
- 10:00 Fertilizers and their use to the hybrid seed producer, *C. O. Rost*
- 11:00 Round-table discussion: Producing hybrid seed corn on the farm, led by *R. E. Hodgson*
- 1:00 The Wisconsin seed drier for use on the farm, *A. H. Wright*, University of Wisconsin
- 2:00 Yield trials of commercial and station hybrids in 1938, *R. F. Crim*
- 3:00 Economic consequences of hybrid corn, *A. A. Dowell*

EXHIBITS

Inbred lines, single, three-way, and double crosses will be exhibited in the Field Crops Building. This exhibit will consist of representative ears of crosses and their parents now under test in central and southern Minnesota together with information regarding yields and period of maturity. Two of the yield trials of commercial seed company and station hybrids will be on exhibition also.

Members of the staff will be available to discuss any phases of these results in which you may be interested.

Bulletin of

University of Minnesota

Department of Agriculture

HYBRID CORN GROWERS SHORT COURSE



Minhybrid 301

December 12 and 13, 1938

University Farm, St. Paul

Vol. XLI

No. 56

November 16 1938

Entered at the post-office in Minneapolis as 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.

REGISTRATION

Each person attending should register in Room 203D, Administration Building. A fee of \$3 is to be paid at the Cashier's Office, Administration Building.

SPEAKERS

All speakers not otherwise identified are staff members of the University Department of Agriculture. Dean W. C. Coffey will open the short course with an address of welcome. A number of experienced growers will take part in the program.

Prof. A. H. Wright, Division of Agronomy, University of Wisconsin, is widely known for his work with the Wisconsin seed-corn drier, used so extensively in Wisconsin and other states. Professor Wright has had an active part in the development of the Wisconsin plan of making seed stocks available and the methods used in seed registration.

BANQUET

A banquet will be held on the evening of December 12, under the auspices of the Minnesota Hybrid Seed Corn Growers Association. All members of the Short Course are invited to attend.

PROGRAM

Monday, December 12

Auditorium, Green Hall

- 9:00 Address of welcome by *Dean W. C. Coffey*
- 9:30 Grading methods used in Wisconsin for registered hybrid seed, *Prof. A. H. Wright, University of Wisconsin*
- 10:15 Problems in planting hybrid seed corn, *J. D. Barnard, Minnesota Valley Canning Company, LeSueur, Minnesota*
- 11:00 Production of inbred lines and single crosses in 1938, *Carl Borgeson*
- 1:30 Methods of breeding used in the production of improved inbred lines, *H. K. Hayes*
- 2:15 Utilization of inbreds in crosses, *Dean Anderson*
- 3:00 New hybrids available for yield trials in 1939, *I. J. Johnson*
- 3:45 Seed-grading demonstration, *Henry Olsgard, Houston, Minnesota (This demonstration will be given in the Field Crops Building)*
- 6:30 Banquet (under auspices of Minnesota Hybrid Seed Corn Growers Association)

BULLETIN OF
UNIVERSITY OF MINNESOTA .
DEPARTMENT OF AGRICULTURE

HOMEMAKERS PROGRAM



JANUARY 16-20, 1939

Vol. XLI

No. 58

November 23 1938

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

THE 1939 program for homemakers brings an interesting group of speakers, a varied program, and exhibits of special value. With new facts to guide us, and new techniques, some of the problems that are always with us may be more easily and better solved. The home economics staff is responsible for bringing new information and new methods to those who attend the Farm and Home Week program. Topics such as the care and use of frozen foods, the selection and care of fabrics for clothing and household furnishings, protective legislation, and modernizing the home will be discussed. Illustrative material will be used by the speakers to demonstrate new techniques. Representative homemakers will be interested in discussing the challenge of present-day living.

Minnesota leaders will discuss the American woman's contributions to family, community, state, and national problems, with particular reference to their bearing on sound home and family life.

Plan to come for the week so as not to miss any part of the excellent program.

Write L. A. Churchill, University Farm, St. Paul, Minnesota, for further information.

—Wylle B. McNeal, Chief
Division of Home Economics

Afternoon

Miss Julia O. Newton, Presiding

- 1:30 **Homemade or Remade Furniture for the Home.**
Miss Vetta Goldstein
- 2:30 **What American Delegates Can Contribute to the Fourth Triennial Meeting of the Associated Country Women of the World.** *Miss Bess Rowe, Webb Publishing Company, St. Paul, and Minnesota Homemakers*
- 3:30 **The Homemaker's Use of Dairy Products, Talk and demonstration.** *Mr. W. B. Combs, Dairy Division, University Farm*

Friday, January 20

Forenoon

Note: There are two programs of interest to homemakers—one in the Home Economics Building, the other at the Meat Shop.

Home Economics

Dr. Jane Leichsenring, Presiding

- 9:15 **The Insurance Program of the Family.** *Mr. John Moir, Group Insurance and Pension Representative, University of Minnesota*
- 10:15 **The New Food and Drug Act.** *Mr. G. A. Vacha, Chief Bacteriologist, Minnesota State Department of Agriculture*

Meat Shop

- 9:15 **Meat-Cutting Demonstration.** *Mr. Phillip Anderson*
- 10:15 **The Wise Use of Meat in the Home.** *Dr. Isabel Noble*

Afternoon

Miss Clara Brown, Presiding

- 1:30 **The Home Care of the Sick.** *Miss Hallie Fisher, Preventive Medicine and Public Health Department, University of Minnesota*
- 2:30 **Combining Textures and Patterns in Home Furnishings.** *Miss Harriet Goldstein*

HOME ECONOMICS EXHIBITS

Fireplace Room

Home Economics Building

Miss Doris Cox in charge,

Crafts and Needlework

*Mrs. Barbara Weismann
Miss Margaret Davis*

Towels

Miss Ethel Phelps and students

Literature for Homemakers

*Miss Kathleen Jeary
Miss Mary Frances Inman
Miss Anne Krost*

Homemade and Remade Furniture

Miss Vetta Goldstein

PROGRAM

All activities listed are in Room 203, Home Economics Building, unless otherwise specified. All speakers are members of the Home Economics staff, unless otherwise identified.

Monday, January 16

Forenoon

Registration, Administration Building, Room 100

Afternoon

Miss Ella Rose, Presiding

- 1:30 Minnesota Homemakers Look Ahead, *Miss Lucy Studley*
- 2:30 The Role of Parents in the Guidance of Youth, *Dr. William H. Bristow*, General Secretary, National Council of Parents and Teachers
- 3:30 Food for the Growing Boy and Girl, *Dr. Jane Leichsenring*
- 5:30 Planning and Serving Buffet Suppers: A Demonstration, *Miss Mildred King* and other faculty members

(Tickets at 45 cents per person may be had at entrance to Home Economics Building. Number of tickets limited. Supper served promptly at 5:30 in Party Dining Room, Cafeteria Building.)

Tuesday, January 17

Forenoon

Miss Carlotta Brown, Presiding

- 9:15 Selecting and Handling Rayon Fabrics, *Miss Ethel Gorham*
- 10:15 Topic to be selected, *Mrs. H. W. Ahart*, Representative, Farm Bureau

Afternoon

Minnesota Farm Bureau Day meeting in the Auditorium. No home economics program. Exhibits open in the Fireplace Room of Home Economics Building.

Wednesday, January 18

Forenoon

Dr. Isabel Noble, Presiding

- 9:15 The Care and Preparation of Frozen Foods in the Home: Demonstration, *Miss Gladys Gilpin*
- 10:15 Frozen Meat Problems, *Mr. K. F. Warner*, United States Department of Agriculture, Washington, D.C.

Afternoon

Mrs. Belle Fish, Presiding

- 1:30 Your Relationship to our Schools, *Dr. W. E. Peik*, Dean of the College of Education, University of Minnesota
- 2:30 "On to London," *Miss Julia O. Newton*, State Leader of Home Demonstration Agents, University Farm
- 3:30 Homemaking, A Challenging Profession, A discussion by Minnesota Homemakers

Thursday, January 19

Forenoon

Miss Alice Biester, Presiding

- 9:15 The Selection of Blankets, *Miss Ethel Phelps*
- 10:15 The Homemaker and Her Hobbies, *Mrs. George Glockler*, Homemaker, Minneapolis