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General Extension Division

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CALENDAR

1950			
September	18	Monday	Fall registration begins
September	30	Saturday	Last day for registration without late fee
October	2	Monday	Fall quarter and semester classes begin
October	14	Saturday	Last day for transfer without late fee
December	18	Monday	Winter quarter registration begins
December	23	Saturday	Christmas recess begins. Fall quarter closes
1951			
January	8	Monday	Fall semester resumes. Winter quarter begins
January	29	Monday	Spring semester registration begins
February	9	Friday	Fall semester closes
February	10	Saturday	Last day for registration without late fee
February	12	Monday	Spring semester begins
February	24	Saturday	Last day for transfer without late fee
March	19	Monday	Spring quarter registration begins
March	24	Saturday	Winter quarter closes
April	2	Monday	Spring quarter begins
June	8	Friday	Spring semester closes
June	16	Saturday	Spring quarter closes

Opening and closing dates for classes on other than semester or quarter basis are indicated below description of each class. Registration should be made during the two weeks preceding the opening of such classes; the customary privilege fees for late registration will be in effect after the opening session of all these classes. See page 2 for registration regulations.

EXTENSION OFFICES

Minneapolis Campus: Ground floor, southeast entrance, Nicholson Hall, University of Minnesota, Lincoln 8791, Midway 3965

Minneapolis (Downtown): 690 Northwestern Bank Building, Marquette Avenue and Sixth Street South, Main 0624

St. Paul: Extension Center, 500 Robert Street, Cedar 6175

Duluth: 504 Alworth Building, Radisson 1317

SPECIAL OFFICE HOURS

Campus Office: September 18 through October 7 and January 29 through February 17: **weekdays**, 12:00 to 8:15 p.m.; **Saturdays**, 9:00 a.m. to 1 p.m.

Minneapolis Office: September 18 through September 29 and January 29 through February 10: **weekdays**, 12:00 to 8:15 p.m.; **Saturdays**, 9:00 a.m. to 1:00 p.m.

St. Paul Office: September 18 through October 7 and January 29 through February 17: **weekdays**, 12:00 to 8:15 p.m.; **Saturdays**, 9:00 a.m. to 1:00 p.m.

REGULAR OFFICE HOURS

Campus Office: Monday through Thursday, 8:00 a.m. to 8:15 p.m.; Friday, 8:00 a.m. to 5:00 p.m.; closed Saturdays.

Minneapolis and St. Paul Offices: Weekdays, 8:30 a.m. to 5:00 p.m.; Saturdays, 9:30 a.m. to 12:00 noon.

Special summer hours or closings may be in effect from June 1 to September 17. Consult offices for schedules.

BOARD OF REGENTS

The Board of Regents is composed of The Honorable Fred B. Snyder, Minneapolis, First Vice President and Chairman; The Honorable Ray J. Quinlivan, St. Cloud, Second Vice President; The Honorable James F. Bell, Minneapolis; The Honorable Daniel C. Gainey, Owatonna; The Honorable Richard L. Griggs, Duluth; The Honorable J. S. Jones, St. Paul; The Honorable George W. Lawson, St. Paul; The Honorable Albert J. Lobb, Rochester; The Honorable E. E. Novak, New Prague; The Honorable A. J. Olson, Renville; The Honorable Herman F. Skyberg, Fisher; and The Honorable Sheldon V. Wood, Minneapolis.

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Marjorie K. Allen, B.A., Coordinator of Extension Relations

EXTENSION SERVICE HEADS AND DIRECTORS

Audio-Visual Extension Service, Erwin C. Welke, 230 Northrop Memorial Auditorium
Center for Continuation Study, Norman Johnson, Center for Continuation Study Building
Community Program Service, James S. Lombard, 229 Northrop Memorial Auditorium
Correspondence Study, F. Lloyd Hansen, 251 Nicholson Hall
Evening and Special Classes, Huntington Miller, 54 Nicholson Hall
Municipal Reference Bureau, Clarence C. Ludwig, 15 Library Building
Radio Station KUOM, Burton Paulu, 1 Eddy Hall
State Organization Service, William C. Rogers, 104 Third Temporary, South of Mines

GENERAL EXTENSION DIVISION

Evening and Special Classes—Twin Cities Area

REGISTRATION REGULATIONS

The following regulations apply to veteran as well as nonveteran students unless otherwise indicated. In addition all service veterans should read **SPECIAL REGISTRATION INFORMATION FOR VETERANS** on page 3.

Registration dates, offices, and office hours are indicated inside the front cover of this bulletin; registration may also be made by mail **EXCEPT BY VETERANS**. Registration forms will be sent to nonveterans upon request to any Extension office.

Eligibility

The University's Extension classes are open to everyone who can handle them successfully. Service veterans may register under the G.I. Bill. See Special Information Regulations for Veterans, page 3. See page 5 for information as to "prerequisites." If you are in doubt as to your qualifications for a course, you should consult the class instructor or an Extension Division adviser before registering. If this is not possible we recommend that you register anyway, to avoid payment of late registration fee, and consult the instructor at the first class session. If the instructor decides that you are not qualified, or that the course does not meet your needs, a note from him to this effect, submitted with your notice of cancellation (see Cancellations and Refunds, below) will bring you a full refund, or a transfer to another class will be accepted without penalty during the first two weeks of classes.

Fees

The full amount of the tuition and other special fees is payable at the time of registration. Checks or money orders should be drawn for the exact amount due and made payable to the University of Minnesota. The fee for each class is designated in the listing of the class in this bulletin.

Registration Periods

All registrations should be made during the two weeks preceding the first week of a class term (semester, quarter, or special). Registration will be permitted through the first three weeks of a semester and the first two weeks of a quarter or special term, subject to certain regulations and fees as set out below. No registrations will be accepted thereafter without special permission of the Students' Work Committee.

Late Registrations

All initial registrations received after the opening of a class term will be considered "late registrations" and will be subject to a privilege fee of \$2 through the first week of classes and \$3 thereafter. The time of registration by mail will be determined by the postmark. These special fees are not included in the privileges of the G.I. Bill and must be paid by the veteran personally.

Additions and Transfers

Classes may be added to an initial registration and transfers will be permitted without penalty through the first two weeks of a semester or quarter. During the third week additions or transfers will be permitted only upon presentation of a **Special Registration Permit** endorsed by the instructor of the class which the student wishes to enter. A privilege fee of \$2 will be required (veterans included) to complete all such late additions or transfers. No classes may be added or transfers made after the third week of a class term without special permission of the Students' Work Committee.

Auditors

A student who does not expect to do all the required work of a class may register as **auditor** by writing "Aud." in the credit column of the registration form, or by asking his instructor to record him as an auditor any time before the final examination. Auditors' status carries no credit. Auditors pay the same fee as other students. **No veteran** may audit any class, however, without written permission from the Extension Veterans Office.

Cancellations and Refunds

Notice of cancellation and application for refund, accompanied by a fee receipt, must be in writing and submitted by the student to one of the Extension Division offices. **The effective date of cancellation** for the purpose of calculating refunds will be that on which notice is received, regardless of the date of last attendance.

Full refund will be made only when class offerings are changed or canceled by the Extension Division, or in certain cases upon certification of the instructor (see Eligibility, page 2).

Partial refunds, in accordance with general university regulations, will be made for all other cancellations which occur during the first half of the class term, provided proper notice is received. **The scale of refunds is available for inspection at any Extension Division office.**

No refunds can be made to students after the first half of the class sessions have been held.

Veterans please refer to **Special Registration Information** section below for additional notes regarding cancellations by veterans.

Maximum Work Load

The maximum amount of Extension work, including both evening classes and correspondence study courses, to be carried by students employed full time is 10 credit hours. Permission to exceed this maximum load must be received from the Students' Work Committee.

Present or Former University Day-School Students

A student who is regularly registered for day class work in any unit of the University may register for Extension classes only with the permission of the dean or head of his unit.

A student who has been dropped from any unit of the University may not register for Extension work without written permission from the dean or head of that unit.

SPECIAL REGISTRATION INFORMATION FOR VETERANS

July 25, 1951 Critical Date for All Veterans

The Veterans Administration has now ruled that for any veteran to get educational or training benefits after July 25, 1951, the following regulations apply:

1. A veteran must be enrolled on this date or in an interrupted status because of normal interruptions such as summer vacations, etc.
2. A veteran must remain in continuous training after this date until he reaches his educational objective.
3. A veteran cannot change his basic course of education after this date except for reasons satisfactory to the Veterans Administration.

In view of the above regulations all Extension veteran students, old and new, must register for classes in the spring semester, 1951, if they wish to use their educational and training benefits after July 25, 1951. Furthermore, such veterans thereafter must be registered continuously for each regular quarter or semester until their educational objectives are reached or their eligibility time expires.

Veterans eligible for education and training under the G.I. Bill (P.L. 346) or the Vocational Rehabilitation Act (P.L. 16) may register for Extension classes at the University of Minnesota upon presentation of proper authorization from the Veterans Administration. The expenses of tuition, fees, books, and supplies for these classes will be paid by the Veterans Administration. In certain cases, depending on income, number of dependents, and credit load being carried, veterans under P.L. 346 may be eligible to receive partial or full subsistence payments from the Veterans Administration.

As a certain amount of delay may be met in obtaining proper authorization from the Veterans Administration, we urge all veterans to check the requirements below and to apply promptly for the necessary papers or to make certain that their current papers are in order, well in advance of registration. The Veterans Office, Room 56, Nicholson Hall, University of Minnesota, Lincoln 8791, will supply all forms or information necessary to making application for Certificates of Eligibility, Authorizations for Related Instruction or Letters of Authorization. The Central Office of the Veterans Administration is now located at Fort Snelling, St. Paul 11, Minnesota.

New Extension Veteran Students

Veterans using their educational benefits under P.L. 346 for the first time, when registering for Extension classes only, must present either an original Certificate of Eligibility or a certified copy, or photostat of their discharge or separation papers. If a veteran has previously used his educational or training benefits at some educational institution or training establishment, other than the University of Minnesota, a Supplemental Certificate of Eligibility must be presented. Veterans who are basically enrolled in another educational institution, or who are in on-the-job training under P.L. 346, must present an Authorization for Related Instruction. Rehabilitation veterans under P.L. 16 must present a Letter of Authorization at each time of registration.

Former University of Minnesota Veteran Students

Veterans using educational benefits under P.L. 346 who have previously submitted an Original or Supplemental Certificate of Eligibility to the University of Minnesota need not secure additional authorization for registration in Extension classes unless they have been in attendance at some other educational institution or training establishment since attending the University or unless they have received an undergraduate degree from the University of Minnesota. Veterans basically enrolled in another educational institution must present an Authorization for Related Instruction at each time of registration. On-the-job trainees under P.L. 346 who have previously submitted an Authorization for Related Instruction to the University of Minnesota need not secure additional authorization for registration provided their Extension classes are related to their training objective. Rehabilitation veterans under P.L. 16 must present a Letter of Authorization at each time of registration. Veterans who are not certain as to the validity of their Certificate of Eligibility, or Authorization for Related Instruction now on file, should apply to the Veterans Office, Room 56, Nicholson Hall, University of Minnesota, for information on this subject. **No veteran registration will be accepted if there is any doubt as to the validity of the Certificate of Eligibility or Authorization for Related Instruction now on file.**

All Veteran Students

No veteran will be accepted for registration in Extension classes without proper authorization from the Veterans Administration. In certain cases, when necessary to avoid payment of late registration fees, a cash registration will be accepted with full refund privileges, pending receipt of a Certificate of Eligibility or Authorization for Related Instruction. Because of the detailed Report of Registration of Veterans which must be submitted to the Veterans Administration, veterans must register in person at some General Extension Division office. **No registration by mail will be accepted from any veteran.** This rule applies to former Extension veteran students as well as new enrollees.

Cancellation of Classes by Veterans

In addition to the regulations governing cancellations listed on page 3, veterans are urged to report all cancellations immediately to the Veterans Office, General Extension Division, in order to protect their eligibility status. **This office will notify the Veterans Administration of the cancellation as of the date received.** Regulations require that in the case of cancellations all books, supplies, and equipment issued must be turned in to one of the General Extension Division offices. Veterans failing to abide by this regulation will be personally liable for payment for such materials.

GENERAL INFORMATION

How to Use This Bulletin for Registering

The listing of each class in this bulletin should in most cases give you all the information you need for filling out your registration forms. Most classes appear under their appropriate department or subject heading; where several classifications are possible, cross references will usually be given. Use of the index at the back of the bulletin plus a little search will usually determine whether the class you are seeking is being offered.

The first line or two of the listing gives you the class number, if any, the title, the number of credits, and the cost per term (semester, quarter, or special) plus special fees, if any. All numbered listings are university credit classes and are the same as those of corresponding day classes or have been approved for Extension use by the department concerned. Other classes are not numbered and are indicated as for "Extension credit"; any of these classes may be applicable toward an appropriate Extension Certificate (see Extension Certificates, page 8). A few class listings are daggered (†), others are continuation classes, i.e., run for two or three semesters or three quarters; for special information concerning registration in these classes see **Daggered Listings and Continuation Classes** below.

The description of the course content follows. If the class is repeated each semester, or if the enrolment is limited, it is so indicated at the end of the description. The course prerequisites, if any, terminate the description (see **Prerequisites** below).

The final items in the listing give the term in which it is to be offered, the day of the week and opening time, the location and the instructor if assigned. Where there is more than one section two schedules are given.

Classes listed in this bulletin may be canceled because of insufficient enrolment.

Classes not listed in this bulletin will, when possible, be organized on petition from a sufficient number of persons.

Prerequisites

Prerequisites are stated for information, not as obstacles. Many Extension classes list no prerequisites, and are open to all who can profit by them. Other classes are of such a nature that they cannot be carried through without certain previous study. The prerequisites listed for the latter are those which, in the judgment of the department concerned, should be met by students who expect to receive university credit for the class. In many cases a reasonable equivalent of related study, training, or experience will be accepted. If you are in doubt as to your status, consult the instructor at or before the first class session. See paragraph on **Eligibility in Registration Regulations** section on page 2 for special refund or transfer privileges in such cases.

Daggered (†) Listings

The units of classes followed by the dagger symbol must be taken in sequence and credit cannot be received for the first unit until the second is completed. Students who have not completed the first unit of a daggered course at the University but who believe they are qualified to enroll in the second unit

must receive permission of the Students' Work Committee before registering for the second unit.

Continuation Classes

Unless otherwise indicated (see, for instance, special notes under **History** and **Art** headings) units of classes which run for two semesters should be taken in sequence and the first unit of the course should be considered as prerequisite to the second unit even though the two units are listed together with "no prerequisite" indicated (see French 1-2, or Machine Design I-II). Students who believe they have the equivalent of the first unit in work done elsewhere, or in practical experience, should consult the instructor either before registering or at the first class session to be sure they have the necessary background to qualify for the advanced unit.

Credits

Validity—The credits listed in the class description are quarter credits, notwithstanding the fact that regular Extension terms are organized as semesters rather than as quarters. Unless these credits are called Extension credits, they are understood to be valid toward a degree in the college under which the class concerned is organized; Extension credits count only toward Extension certificates, not toward degrees. Note that classes in certain subjects carry less university credit in Extension than do the corresponding day school classes owing to the limited number of class hours and extent of course content of the Extension class (i.e., Econ. 6-7 carries 6 credits in Extension against 10 credits in the College of Science, Literature, and the Arts and the School of Business Administration). The successful completion of these subjects in Extension, however, does meet the prerequisite requirements of advanced subjects in both Extension and day school.

Transfer—Credits may sometimes be transferred from one college to another, or from another accredited institution to this University, but requests for such transfer are always ruled on individually and according to their merits; consult the Students' Work Committee.

Established by special examination—A student who, by independent study or by experience, has gained knowledge which he believes to be equivalent to that covered by a particular Extension class may establish credit for such class by passing a special examination on the subject matter covered by the class. The fee for such special examination is \$5. In the same way, a student may establish credit for work done at an unaccredited institution. Arrangements for special examinations are made through the Students' Work Committee.

Residence—Credits earned in undergraduate Extension classes in Minneapolis, St. Paul, and Duluth are "resident" credits.

Graduate—A graduate student may, upon the approval of his graduate adviser, petition the dean of the Graduate School to have transferred to his graduate record not more than six quarter credits under Plan A or nine quarter credits under Plan B in courses numbered 100 and above offered by the Extension Division of the University of Minnesota in the Twin City area, and taught by regularly approved members of the graduate faculty (for this information, consult the chairman of the Students' Work Committee). Petition to transfer is limited to credits earned in Extension classes since September, 1943. Such transfer of credits will not give residence credit.

For special adjustments which are possible regarding graduate credit in the School of Social Work, consult the School of Social Work.

Honor points—For Extension certificates honor points are used only to ascertain whether a student has the required C average; they are not used to reduce the number of credits required for a certificate. Students in Extension classes who are seeking degrees should consult an officer in the college in which the degree is sought regarding the status of honor points in that college.

Grades

The grades A, B, C, and D indicate work of varying degree of merit, D being the lowest passing grade. The grade F, failure, indicates a deficiency so serious that the student must repeat the class to earn credit in it; a student who receives a failure in a continuation class may not register for another part of such a class until the failure is made up.

Incomplete work which is of at least D grade, but for acceptable reasons not complete, may be marked I, Incomplete, provided the student has completed approximately three fourths of the work of the class. Incomplete work may be completed in any way the instructor directs and should have the student's earliest attention. If this is not done within a year, the incomplete becomes a cancellation. In such a case, a student may ask that the cancellation be set aside and that he be permitted to make up the incomplete. If his request is approved, the special examination fee, \$5, is charged.

Reports of students' grades are sent them by the Extension clerk in the University Office of Admissions and Records and cannot be furnished by the Extension offices. The assistant dean's office, however, will check reports if necessary and will obtain transcripts of students' records upon request.

Athletic Facilities and Season Tickets

Recreational activities for men and women are listed in this bulletin. In addition, men may use the gymnasium and swimming pool on terms available on request.

Any student enrolled for at least five credits of Extension classes (but not correspondence study courses) with a minimum fee of \$25 may purchase one season ticket book at \$10. Married students may purchase a second book, for use by husband or wife only, at \$14, including additional federal admission tax equal to amount paid by general public. Books may be bought at the special student athletic ticket sale headquarters on the campus the week before classes begin. Regulations governing purchase, transfer, and cancellation of these books are available on request.

The University Library

Extension students attending classes in Minneapolis or St. Paul are entitled to draw books from the University Library to be used in connection with their classes but are subject to all library regulations including those in regard to return upon demand and to fines on overdue books. These regulations are set forth in the *Library Handbook*, copies of which may be had at the loan desk.

Minneapolis Symphony Orchestra Tickets

Special rates for season tickets to the regular concert season are available to students registered for at least five credits in Extension classes.

ADVICE AND COUNSELING

Members of the Extension Division staff are available at all offices by **appointment** throughout the year for general advisory services on the selection of classes, programs of study, certificate and degree requirements, etc. The Students' Work Committee in the Campus office assists students in arranging programs of study leading to university degrees, and handles evaluations of transcripts for advanced standing, satisfaction of prerequisites, special examinations, and other academic matters. Appointments for the testing and counseling services of the University Student Counseling Bureau may also be arranged through the Students' Work Committee.

Every effort will be made to have an adviser on duty at the Campus office at all times during special office hours before each semester (see inside cover). If special advice is required, however, an appointment is recommended. Advisers will be on duty at downtown offices during registration periods at convenient hours; consult offices for schedule or make special appointments.

UNIVERSITY DEGREES

It is possible through Extension classes alone to meet all the requirements for several of the regular university degrees such as: in the College of Science, Literature, and the Arts, the 4-year bachelor of arts with an interdepartmental major and the 2-year associate in liberal arts; in the School of Business Administration, the bachelor of business administration and the bachelor of science in economics. In some other degree programs an Extension student can complete all but a few credits in the most advanced subjects, while in still others such as Engineering, Education, Prelegal, Nursing, Pharmacy, Dentistry, etc., the Extension Division can furnish the equivalent of from one to two years of the total degree program.

A student who wishes to become a candidate for a university degree must eventually meet the admission requirements of the University and the entrance and degree requirements of the college in which the degree is sought. The Extension Students' Work Committee will assist the student to determine his status with regard to these requirements. In all cases an Extension student who has reached the point of qualifying for Senior College (the equivalent of junior or third year) standing should apply for admission to the college or school of his choice and, upon acceptance for admission, should select an adviser in such college or school and continue a program of study under the adviser's supervision. **All students who expect to complete the requirements for a university degree during a coming semester should make formal application at the beginning of the semester** for the award by the college or school concerned.

EXTENSION CERTIFICATES

The General Extension Division awards certificates for the satisfactory completion of approved programs of study. The work may be done in evening classes, correspondence study courses (see page 11), or both. Most day school or Summer Session credits from the University of Minnesota may be approved. Students may also transfer credits from other accredited institutions provided a minimum of 25 per cent of the credits required for the certificate is earned at the University of Minnesota. For advice or information on programs of study leading to certificates, including **permission for substitution and transfer of credits**, consult the Students' Work Committee. Certificates are awarded to students who complete with a C average any of the following programs of study:

LIBERAL EDUCATION CERTIFICATE

English requirement: Freshman Composition 4-5-6, or exemption.

Spread requirement: at least 6 credits in each of the following fields:

- Humanities: English composition (beyond 4-5-6) or literature, fine arts, foreign languages, humanities, philosophy, speech
- Sciences: astronomy, botany, chemistry, geology, mathematics, physics, psychology, zoology
- Social Sciences: anthropology, economics, geography, history, political science, sociology

Concentration requirement: at least 12 credits in one subject, or in approved related subjects in addition to the 6 or 9 credits earned in that subject under the spread and English requirements above.

Electives: additional courses approved by the Students' Work Committee to make a total of **45 credits** for the certificate.

BUSINESS ADMINISTRATION CERTIFICATES

Junior Certificate

Core requirement:

- Business English or Composition 4, or exemption
- B.A. 51 Business Law
- Econ. 5 Elements of Statistics
- Econ. 6-7 Principles of Economics
- Econ. 24-25-26 Principles of Accounting

Spread requirement: at least one three-credit course in any three of the following fields:

Business Administration: B.A. 89 Production Management
 Distribution: Advertising, Marketing and Merchandising, Traffic and Transportation
 Finance
 Labor and Personnel
 Business Law: B.A. 52, 53, or 56

Concentration requirement: at least 9 additional credits in one of the following fields, or approved combination thereof:

Accounting	Labor and Personnel
Advertising	Marketing and Merchandising
Economics	Statistics
Finance	Traffic and Transportation
Insurance	

Electives: additional courses approved by the Students' Work Committee to make a total of **45 credits** for the certificate.

Senior Certificate

Core requirement:

Business English and Business Correspondence or Composition 4-5-6, or exemption
 B.A. 51 and either 52 or 53 Business Law
 B.A. 89 Production Management
 Econ. 3 Elements of Money and Banking
 Econ. 5 Elements of Statistics
 Econ. 6-7 Principles of Economics
 Econ. 24-25-26 Principles of Accounting
 Econ. 73 Labor Problems and Trade Unionism

Concentration requirement: at least 18 additional credits in one of the following fields, or approved combination thereof:

Accounting	Labor and Personnel
Advertising	Marketing and Merchandising
Economics	Statistics
Finance	Traffic and Transportation
Insurance	

Electives: additional courses approved by the Students' Work Committee to make a total of **90 credits** for the certificate.

INDUSTRIAL RELATIONS CERTIFICATE

Industrial Relations Certificate

Core requirement:

- *Econ. 6-7 Principles of Economics
- *Econ. 73 Labor Problems and Trade Unionism
- Econ. 162 Labor and Socialist Movements
- *Econ. 164 Labor Legislation and Social Insurance
- B.A. 167 Introduction to Industrial Relations
- Survey of Current Problems in Industrial Relations
- *Psy. 1-2 General Psychology
- Psy. 4-5 Introductory Laboratory Psychology
- Psy. 122-123 Vocational and Personnel Psychology

Electives: additional courses selected from the following or other approved courses to make a total of **45 credits**.

- *B.A. 86 Office Management
- B.A. 89 Production Management
- Psy. 119 Psychology of Personality
- Psy. 125-126 Psychology of Individual Differences
- Psy. 144-145 Abnormal Psychology
- *Soc. 100 Social Psychology
- Wage and Salary Administration
- Elements of Supervision
- Advanced Supervision
- Work Simplification
- Work Measurement and Production Standards
- Industrial Plant Layout
- Elements of Union Administration

* Also offered by correspondence study.

Special requirement: to qualify for the certificate award upon completion of the core and elective requirements, a student must pass an Industrial Relations Classification and Placement Test administered by the Industrial Relations Center.

GENERAL ENGINEERING CERTIFICATES

Junior Certificate

Core requirement:

- M.&M. 11 College Algebra
- M.&M. 12 Trigonometry
- M.&M. 13 Analytic Geometry
- M.&M. 24 Differential Calculus
- M.&M. 25 Integral Calculus
- M.&M. 26 Technical Mechanics: Statics
- D.&D.G. 1-2 Engineering Drawing

Electives: additional courses approved by the Students' Work Committee to make a total of **45 credits** for the certificate.

Senior Certificate

Core requirement:

- M.&M. 11 College Algebra
- M.&M. 12 Trigonometry
- M.&M. 13 Analytic Geometry
- M.&M. 24 Differential Calculus
- M.&M. 25 Integral Calculus
- M.&M. 26 Technical Mechanics: Statics
- M.&M. 127 Technical Mechanics: Dynamics
- M.&M. 128a-128b Strength of Materials
- D.&D.G. 1-2 Engineering Drawing

Concentration requirement: at least 30 additional credits in one of the following fields, or approved combination thereof:

- | | |
|--------------------------|------------------------|
| Aeronautical Engineering | Electrical Engineering |
| Civil Engineering | Mechanical Engineering |

Electives: additional courses approved by the Students' Work Committee to make a total of **90 credits** for the certificate.

INDUSTRIAL ENGINEERING CERTIFICATES

Junior Certificate

Core requirement:

- Composition 4 or Business English
- M.&M. 11 College Algebra
- M.&M. 12 Trigonometry
- D.&D.G. 1 Engineering Drawing
- D.&D.G. 2 Engineering Drawing
- Machine Tool Operation I
- Econ. 6 Principles of Economics
- Econ. 7 Principles of Economics
- B.A. 89 Production Management
- Work Simplification
- Work Measurement and Production Standards

Electives: additional courses may be selected from the list of requirements or recommended electives listed under senior certificate provided that sufficient courses are taken to make a total of **45 credits** for the certificate.

Senior Certificate

Core requirement:

- Business English and Correspondence, or
Composition 4-5-6 or exemption
- M.&M. 11 College Algebra
- M.&M. 12 Trigonometry
- M.&M. 13 Analytic Geometry
- D.&D.G. 1 Engineering Drawing
- D.&D.G. 2 Engineering Drawing
- D.&D.G. 3 Descriptive Geometry
- Machine Tool Operation I
- Machine Tool Operation II

Econ. 6 Principles of Economics
Econ. 7 Principles of Economics
Econ. 73 Labor Problems and Trade Unionism
B.A. 167 Introduction to Industrial Relations
Econ. 5 Elements of Statistics, or
Basic Industrial Statistics I
B.A. 89 Production Management
Production Planning and Control
Work Simplification
Work Measurement and Production Standards
Industrial Plant Layout
Elements of Quality Control
*Manufacturing Cost Analysis

Electives: additional courses may be selected in other fields approved by the Students' Work Committee to make a total of **90 credits** for the certificate. The following courses are recommended.

Psy.1-2 General Psychology
B.A. 133 Standard Cost Accounting and Distribution Costs
Elements of Supervision
Wage and Salary Administration
D.&D.G. 52 Alignment Charts
Industrial Safety and Hygiene
Beginning Practical Speech Making
Basic Salesmanship
Motion Picture Photography

CORRESPONDENCE STUDY COURSES

A large selection of correspondence study courses is available to students who prefer this form of study; ask for a bulletin.

* First offering in 1951-52.

GENERAL CLASSES

AGRICULTURE

Note—Students who travel by street car or bus can reach the Agriculture Buildings on the St. Paul Campus by taking the intercampus street car that leaves the Minneapolis Campus at 6:00 p.m.

Agr. Eng. 42A-B Art Metal Work. See Engineering Classes, page 53.

6 Types and Breeds of Light Horses. 3 credits. \$15 plus \$3 laboratory fee.

The recreational and economic importance of the common types and breeds of light horses. Includes discussions of origin, development, characteristics, and gaits of each breed. Actual practice in judging, estimating age, identifying, and evaluating unsoundness. Discussions on feeding and care of horses. No prerequisite.

Spring Semester

T 7:00 Livestock Pavilion, St. Paul Campus,
Harvey

7 Principles of Livestock Production. 3 credits. \$15 plus \$2 laboratory fee.

An introduction to the livestock industry including a study of the basic principles involved in selection, feeding, breeding, and management of beef cattle, sheep, swine, horses, and poultry. Practice in judging the various kinds of farm animals. No prerequisite.

Fall Semester

T 7:00 Livestock Pavilion, St. Paul Campus,
Harvey

12 Dairy Stock Feeding and Management. 3 credits. \$15.

Emphasis on the practical side of dairy stock feeding and management of a modern dairy. Application of principles of nutrition to feeding. Feeding standards; characteristics of various feeding stuffs; formulation of rations. No prerequisite.

Spring Semester

Th 6:20 Haecker 9, St. Paul Campus,
Gullickson

Hort. 10 Home Floriculture and Gardening. 3 credits. \$15.

A practical course in the science of house plant growing, propagation and care of plants; and special emphasis on autumn gardening activities; growing bulbs in the garden and in pots for the home in winter. Student projects in growing plants from cuttings; and growing and forcing bulbs for winter house plants. A special course for the housewife, the school teacher, the tired businessman, the weary professional worker, and the plain-dirt gardener who wants to extend his knowledge of plant culture and enjoy some activity with plants throughout the year. No prerequisite.

Fall Semester

T 6:20 Horticulture 102, St. Paul Campus,
Phillips

Hort. 24 Home Landscape Planning. 3 credits. \$15.

An opportunity for the home owner to learn the principles of planning the home grounds and how to apply them to his own problem of landscaping his home grounds. This course is also designed to meet the needs of the nurseryman, the landscape gardener, and the student who expects to make his living by landscaping. Anyone planning a new home will find this course especially helpful in accomplishing his ideal, which is a well-planned house, and well-planned and planted grounds and gardens. No prerequisite.

Fall Semester

Th 6:20 Horticulture 102, St. Paul Campus,
Phillips

Hort. 25 Home Landscape Planting and Construction. 3 credits. \$15.

More or less a continuation of the course in Home Landscape Planning; however, a beginning student may take this course without being handicapped. Special emphasis is placed upon the recognition and use of plant materials in securing artistic landscape compositions and the planning and planting of ornamental gardens; also construction of lawns, gardens, walks, walls, fences, terraces, pools, etc. An art course in landscaping and gardening presented in a practical way for the home owner, the landscape gardener, the student of art and nature.

Spring Semester

Th 6:20 Horticulture 102, St. Paul Campus,
Phillips

Hort. 51 Garden Flowers and Home Gardening. 3 credits. \$15.

A complete, practical course in home gardening for the experienced gardener as well as the beginner. All the practical horticultural aspects of plant growing and garden and home grounds care are covered in lecture, demonstrations, and illustrations; student projects in propagating plants in greenhouses, hot beds, and home facilities. Special emphasis on pruning, fertilizing, weed, insect, disease control. Also a survey of all the plants recommended for Minnesota gardens and yards. No prerequisites.

Spring Semester

T 6:20 Horticulture 102, St. Paul Campus,
Phillips

ANTHROPOLOGY**40 Introduction to Anthropology.** 3 credits. \$15.

The course serves as an introduction to the entire field of anthropology: physical anthropology, prehistory, cultural anthropology. Lectures and readings will cover man's relations to the primates, human evolution, the races of man, the development of culture, and a survey of the varieties of ways of life in primitive and modern societies. Introductory anthropology should be of special interest to students of related fields like history, sociology, and psychology.

Fall Semester

T 8:05 Ford 5, Endleman

113 The Character of Culture. 3 credits. \$15.

A more advanced course in cultural anthropology. Explores the nature of culture, culture patterns and themes, and the relationships between culture, social structure and personality, with specific reference to several different societies, nonliterate, folk, and modern. Examination of the problem of cultural change, and critical discussion of the cultural approach to the study of large-scale civilizations. Contributions—and limitations—of modern anthropology to the understanding of different societies in a rapidly contracting world.

Spring Semester

T 8:05 Ford 5, Endleman

ARABIC

See Linguistics, page 26.

ART

* **Note**—All studio drawing and painting classes, designated by asterisks (*), will meet for a 2½-hour period. Those who wish to receive university credit in these courses will be expected to do some work outside of class—consult instructor. Students may register for any unit number of these sequences in any semester, provided units are satisfactorily completed in the order listed or instructor's consent is obtained for registration in an advanced unit on the basis of background and ability. Advanced standing credit will be granted in special cases for work done elsewhere—consult chairman of Art Department.

All registrations for St. Paul art classes will be taken only at the Extension Center, 500 Robert Street.

1 Understanding the Arts. 3 credits. \$15.

An illustrated lecture course designed to give the student an understanding of art, including painting, sculpture, architecture, and the industrial arts. This understanding is based on the study of the great works of art, knowledge of the principles involved in their creation, and recognition of the place of art in its social setting. No prerequisite.

Fall Semester

W 6:20 Nicholson 209

***20-21-22 First Year Drawing and Painting.** 2 credits each semester. \$15 plus \$2 laboratory fee. **First Year Drawing and Painting Laboratory** (St. Paul). 2 Extension credits. \$10.

Introduction to materials and techniques; still life, figures, and landscape. No prerequisite.

Fall Semester

T 7:00 Main Engineering 417, Doseff
Th 7:00 Main Engineering 417, Young
Th 7:00 St. P. Gallery
Lab. T 7:00 St. P. Gallery

Spring Semester

T 7:00 Main Engineering 417, Doseff
Th 7:00 Main Engineering 417, Young
Th 7:00 St. P. Gallery
Lab. T 7:00 St. P. Gallery

***30-31-32 Commercial Drawing.** 2 credits each semester. \$15 plus \$1 laboratory fee.

Elementary and advanced commercial art: design, lettering, layouts, posters in pen and ink, pencil, color, or other media. Solutions of practical problems stressed. Special attention to fashion drawing and design. No prerequisite.

Fall Semester

M 7:00 Main Engineering 417, Doseff

Spring Semester

M 7:00 Main Engineering 417, Doseff

***40-41-42 Sculpture I—Modeling.** 2 credits each semester. \$15 plus \$2 laboratory fee.

A basic course in sculpture introducing the student to the fundamental materials and problems of three-dimensional design necessary for further work in sculpture or ceramics. Modeling in clay and plaster. Ceramic sculpture. Portrait, figure, and volume design. No prerequisite.

Fall Semester
W 7:00 Main Engineering 405, Sabean

Spring Semester
W 7:00 Main Engineering 405, Sabean

***43-44-45 Design Workshop (General Crafts).** 2 credits each semester. \$15 plus \$2 laboratory fee.

Studies in the natures of materials, exercises in three-dimensional design. Work in metal, wood, clay, leather, plastics, etc. Class meets for 2½-hour period. No prerequisite.

Fall Semester
T 7:00 Jones 2, Frazier

Spring Semester
T 7:00 Jones 2, Frazier

***60-61-62 Second Year Drawing and Painting.** 2 credits each semester. \$15 plus \$2 laboratory fee. **Second Year Drawing and Painting Laboratory (St. Paul).** 2 Extension credits. \$10.

Still life and figure problems to be carried out in charcoal, chalk, water color, and oil. Study of problems related to drawing and painting through experiments designed to suit the needs and purposes of the individual student. Prerequisite: First Year Drawing and Painting or equivalent with instructor's consent.

Fall Semester
T 7:00 Jones 200B, Whiteside
W 7:00-9:30 St. P. Gallery
Lab. T 7:00 St. P. Gallery

Spring Semester
T 7:00 Jones 200B, Whiteside
W 7:00-9:30 St. P. Gallery
Lab. T 7:00 St. P. Gallery

83 Interior Design (Interior Decorating I). 3 credits. \$15 plus 50 cents laboratory fee.

A study of traditional and modern furniture used today and of how to combine various styles. Additional subjects include room composition, color, floor coverings, wall treatments, window treatments. Some general discussions of new ideas and materials in home building. Interesting optional field trips. Drawing not emphasized. Slides and practical demonstrations are used in the regular class procedure. Each section is limited to 75 students, accepted in order of registration. Repeated spring semester. No prerequisite.

Fall Semester
M 6:20 Nicholson 207, Lewis
T 6:20 Nicholson 207, Lewis
W 6:20 Nicholson 207, Lewis
Th 6:20 Nicholson 207, Lewis

Spring Semester
M 6:20 Nicholson 207, Lewis
Th 6:20 Nicholson 207, Lewis

84 Interior Design (Interior Decorating II). 3 credits. \$15 plus 50 cents laboratory fee.

A study of decorative fabrics is an important part of the course. Students plan color schemes for specific rooms and have available beautiful fabrics and other materials. Such accessories as china, glass, silver, and movable wall decorations are included. Several talks are given by buyers from loop stores. Students are required to do some drawing and experimenting with paints; therefore, auditing is not advised. Prerequisite: Art 83.

Spring Semester
T 6:20 Nicholson 209, Lewis
W 6:20 Nicholson 209, Lewis

Textiles. See page 49.

***87 Textile Design: Weaving.** 2 credits. \$15.

Textile design and construction offering experience in all the processes involving the two-harness loom, including the designing and weaving of the finished fabric with explorations in texture, spacing, and color for specific uses such as clothing, rugs, drapery, and accessories. Prerequisite: consent of instructor.

Spring Semester
M 7:00 St. P. Gallery, Kolb

***90-91-92 Print Processes.** 2 credits per semester. \$15 plus \$5 materials fee.

Engraving, etching, lithography, block prints. Prerequisite: consent of instructor.

Fall Semester
Th 6:20 Jones 203, Dillingham

Spring Semester
Th 6:20 Jones 203, Dillingham

* See note directly under Art.

*93-94-95 Ceramics. 2 credits each semester. \$15 plus \$5 laboratory fee. Ceramics Laboratory (St. Paul). 2 Extension credits. \$10.

Introduction to materials, forming methods, and production processes. Model making by hand and machine methods. Problems in product design, such as dinnerware. Experience in industrial methods of forming, such as slip casting, jiggering, and pressing. Fundamentals of pottery including handbuilding and wheel throwing. No prerequisite.

Fall Semester

M 6:20 Jones 10, Schwabacher
W 6:20 Jones 10, Schwabacher
W 7:00 St. P. Gallery, Kolb
Th 7:00 St. P. Gallery, Kolb
Lab. M 7:00 St. P. Gallery, Kolb

Spring Semester

M 6:20 Jones 10, Schwabacher
W 6:20 Jones 10, Schwabacher
W 7:00 St. P. Gallery, Kolb
Th 7:00 St. P. Gallery, Kolb
Lab. M 7:00 St. P. Gallery, Kolb

103 Seminar in Interior Design. 3 credits. \$15 plus 50 cents laboratory fee.

An expansion of some of the fundamentals in Art 83-84. Students will work on individual projects under supervision. No auditors. Class limited to 20. Prerequisite: Art 84.

Fall Semester

W 8:05 Nicholson 209, Lewis

Art Ed. 17-18 Survey of Art. See page 17.

Agr.Eng. 42A-B Art Metal Work. See Engineering Classes, page 53.

Architectural Drafting. See page 55.

Production Illustration. See page 55.

Industrial Design. See page 55.

Beginning and Advanced Cameracraft. See page 30.

Applied Photography I-II. See page 30.

Motion Picture Photography. See page 30.

Gardening and Landscaping. See page 12.

Modern Home Planning and Drawing. See page 24.

ASTRONOMY

Note—Students who wish to use astronomy to meet the natural science requirement for either the A.L.A. or B.A. degrees in the College of Science, Literature, and the Arts may do so by completing Astronomy 11 and 13 and another related course approved by the Students' Work Committee.

11 Descriptive Astronomy. 3 credits. \$15.

The general principles and fundamental facts of astronomy; illustrated by lantern slides, simple problems, and naked-eye and telescopic observation. The new Spitz Projection Planetarium will be used extensively to provide superior demonstration opportunities regardless of weather conditions. Higher mathematics not necessary.

Fall Semester

W 6:20 Physics 133, Luyten

13 Practical and Stellar Astronomy. 3 credits. \$15.

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

Spring Semester

W 6:20 Physics 133, Luyten

BACTERIOLOGY

Note: Students who cannot furnish their own microscopes for bacteriology classes will be required to pay \$3 for a microscope rental card which may be obtained at the first laboratory session.

53 General Bacteriology. 5 credits. \$25 plus \$3 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 and to disease; bacteriology as a science; morphology and physiology. Class meets 6 hours per week for 11 weeks. Prerequisite: 10 credits in chemistry and 4 credits in biological sciences, or permission of instructor.

Fall Quarter

MW 7:00 Millard 214

* See note directly under Art.

102 Medical Bacteriology. 5 credits. \$25 plus \$3 laboratory fee.

The pathogenic bacteria, especially in their relationship to disease; principles of infection and immunity. Prerequisite: General Bacteriology 53. Class meets 6 hours per week for 11 weeks.

February 12-April 25

MW 7:00 Millard 214

CHEMISTRY

A \$10 chemistry deposit card is required for each of the courses in chemistry. Information concerning the procurement of this card will be given at the first meeting of each class. A course fee of \$3 and charges for laboratory material and breakage will be punched out of the deposit card. The balance will be returned to the student at the end of the semester.

6-7† General Inorganic Chemistry. 5 credits per semester. \$25.

Study of the general laws of chemistry and of the nonmetals, metals and their compounds. No prerequisite.

Fall Semester

6 Lab. T	7:00-10:00	Chemistry 325, Herr	7 Lab. T	7:00-10:00	Chemistry 325, Herr
Lect. Th	7:00-9:00	Chemistry 325, Herr	Lect. Th	7:00-9:00	Chemistry 325, Herr

Spring Semester**12 Semimicro Qualitative Analysis.** 5 credits. \$25.

Laboratory work in systematic qualitative analysis of cations with lectures on solutions, ionization, chemical and physical equilibria, oxidation and reduction, etc. Prerequisite: Inorganic Chemistry 2, 5, 7 or 10.

Fall Semester

Lect. T	8:00-10:00	Chemistry 325, Herr
Lab. Th	7:00-10:00	Chemistry 325, Herr

Spring Semester

Lect. T	6:00-8:00	Chemistry 315, Herr
Lab. Th	7:00-10:30	Chemistry 310, Herr

1 Quantitative Analysis—Gravimetric. 5 credits. \$25.

Principles and methods of gravimetric analysis; typical problems and proper laboratory practice. Prerequisite: Inorganic Chemistry 11 or 12.

Spring Semester

Lect. T	6:00-8:00	Chemistry 315, Herr
Lab. Th	7:00-10:30	Chemistry 310, Herr

2 Quantitative Analysis—Volumetric. 5 credits. \$25.

General principles, methods and calculations of volumetric analysis. Prerequisite: Inorganic Chemistry 11 or 12.

Fall Semester

Lect. T	6:00-8:00	Chemistry 315, Herr
Lab. Th	7:00-10:30	Chemistry 310, Herr

Spring Semester

Lect. T	8:00-10:00	Chemistry 315, Herr
Lab. Th	7:00-10:30	Chemistry 310, Herr

7 Quantitative Analysis—Premedical. 4 credits. \$20.

Introductory, covering principles and methods of gravimetric and volumetric quantitative analysis; typical problems and proper laboratory practice. Prerequisite: Qualitative Analysis 11 or 12.

Spring Semester

Lect. T	8:00-10:00	Chemistry 315, Herr
Lab. Th	7:00-10:30	Chemistry 310, Herr

123 Advanced Quantitative Analysis. 3 credits. \$15.

Prerequisite: Analytical Chemistry 1-2 or equivalent. Repeated spring semester.

Fall Semester

TTh	7:00-10:00	Chemistry 310, Herr
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Spring Semester

TTh	7:00-10:00	Chemistry 310, Herr
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Practical Laboratory Instrumentation. 4½ Extension credits. \$22.50 plus \$2.50 laboratory fee.

An elementary course designed to cover the principles of operation and maintenance of colorimeters, spectrophotometers, nephelometers, fluorometers, pH meters, and other electronic and optical instruments used in analytical and research laboratories. Simplified theory and the practical aspects of maintenance and repair are stressed. Typical circuits are analyzed and explained. The course is divided between lecture and laboratory. Seventeen 3-hour meetings. No prerequisite.

Fall Semester

T	6:20	Physics 133, Edmondson
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CHILD WELFARE**40 Child Training.** 3 credits. \$15.

Physical and mental development of the child; training of young children; behavior problems; techniques of good and bad management. Repeated spring semester. Prerequisite: Psychology 1-2.

Fall Semester

T	8:05	Folwell 101, Cummings
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Spring Semester

T	8:05	Folwell 101, Cummings
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† See Information, page 5.

80 Child Psychology. 3 credits. \$15.

A survey of the psychology of the young child from the standpoint of development and learning. Repeated spring semester. Prerequisite: Psychology 1-2.

Fall Semester
M 6:20 Folwell 101, Deno

Spring Semester
M 6:20 Folwell 101, Deno

131 Personality, Emotional and Social Development of the Child. 3 credits. \$15.

Interpretation of the scientific literature on development and adjustment. Prerequisite: 12 credits in psychology or the equivalent.

Spring Semester
W 8:05 Folwell 101, Brieland

132 Later Childhood and Adolescence. 3 credits. \$15.

The meaning of adolescence; growth and personality development; vocational guidance; sex education, social adjustment, and emancipation from the family. Prerequisite: Child Welfare 80 or equivalent.

Fall Semester
W 8:05 Folwell 101, Brieland

140 Behavior Problems in Younger Children (Same as S.W. 173A). 3 credits. \$15.

Nature and origin of behavior difficulties in younger children; relation of earlier to later maladjustment; assessment, treatment and training. Prerequisite: 12 credits in psychology, educational psychology or sociology.

Fall Semester
W 6:20 Folwell 101

141 Behavior Problems in Older Children (Same as S.W. 173B). 3 credits. \$15.

Origin and underlying factors in behavior difficulties in older children; adjustment at adolescence; treatment and training. Prerequisite: 12 credits in psychology, educational psychology or sociology.

Spring Semester
W 6:20 Folwell 101

COMMUNICATION

1a-2a-3a. 3 credits each unit. \$15 each quarter.

A practical course intended to prepare the student to communicate more effectively in speech as well as in everyday writing. Extensive practice in writing and in various kinds of speaking situations is accompanied by a study of how language actually functions to convey meaning. Since much opinion-forming communication is received through the mass mediums, the third term is devoted to the press, film, and radio in order to develop the student's power to receive such information with critical discrimination. The sequence is accepted by the University as meeting all requirements which are satisfied by English 4-5-6 (Freshman Composition). Class meets for a period of 2½ hours each week. Prerequisite: Preparatory Composition or satisfactory score on English placement test, as explained under English, page 19.

Fall Quarter
1a T 6:20 TNM 107, Allen

Winter Quarter
2a (same schedule as fall)

Spring Quarter
3a (same schedule as fall)

EDUCATION

Art Education

17-18 Survey of Art in Life and Education. 3 credits each semester. \$15.

An introductory survey for the education majors, especially elementary teachers, to develop appreciation and understanding through illustrated lectures, laboratory demonstrations and experiments of the content and importance of art in modern education. 17: The artist's contribution to our lives, his materials, techniques, and basic modes of expression. 18: The importance of design in historic and modern art; influential ideas, individuals and movements; significant relationships between art and nature. The number listed is the emphasis which prevails for the semester. A complete course is offered each semester; open to all. No prerequisite.

Fall Semester
17 W 6:20 Jones 109, Hastie

Spring Semester
18 W 6:20 Jones 109, Hastie

81 Puppetry in Art Education Programs. 3 credits. \$15.

The use of various forms of simple puppetry as a teaching technique with emphasis on problems of motivation and correlation with school subjects. Construction, manipulation, and stage techniques approached as they relate to typical school situations.

Fall Semester
Th 6:20 Jones 108, Page

Educational Psychology

60 Introduction to Measurements and Statistics. 3 credits. \$15.

This course includes a study of measures of central tendency, variability and correlation. Prerequisite: 6 credits in psychology.

Fall Semester

Th 6:20 St. P. Ext. Center 217,
Van Wagenen

120 Basic Principles of Measurement. 3 credits. \$15.

Principles of measurement applied to the construction and evaluation of tests and to the interpretation of scores. Illustrations from achievement, intelligence, interest, attitude, and personality tests. Prerequisite: Ed.Psy. 60 or equivalent.

Spring Semester

Th 6:20 St. P. Ext. Center 217,
Van Wagenen

113-114-115 Psychology of Elementary School Subjects. 3 credits each semester. \$15.

A discussion of the research studies in the field of psychology of the elementary school subjects. Prerequisite: 10 hours in psychology and education.

Fall Semester

113-114 M 6:20 N. W. Bank 690,
Van Wagenen

Spring Semester

114-115 M 6:20 N. W. Bank 690,
Van Wagenen

History of Education

90-91 Problems and Techniques of Intergroup Education. 3 credits each unit. \$15.

These courses have two main objectives: (1) to inquire into the kinds of information and attitudes of mind a student, whether as teacher or as citizen, should possess in order to live happily and usefully in a democratic society; (2) to provide an opportunity for students to familiarize themselves with the techniques of intergroup education adapted to classroom use. Panels, films, exhibits, recordings, etc., are employed for concrete illustration. **Not offered in Twin Cities 1950-51.**

Nursing Education

58 Introduction to Ward Administration. 3 credits. \$15.

The place of the head nurse in the hospital organization, basic principles of maintaining a good nursing service, analyzing patients' needs and directing the activities of the ward personnel. Open to graduate nurses. Repeated spring semester.

Fall Semester

M 5:00 Medical Sciences 113, Grainger

Spring Semester

M 5:00 Medical Sciences 113, Grainger

62 Introduction to Personnel Work in Nursing. 3 credits. \$15.

An introduction to the principles, techniques, and application of the personnel point of view to nursing through consideration of such topics as psychological principles; the nature, measurement, evaluation, and recording of individual differences in intelligence, special abilities, motivation, and personality; and study of counseling techniques appropriate for the nursing staff and faculty to use. Open to graduate nurses.

Fall Semester

T 6:20 Medical Sciences 113, Johnston

72 Application of Principles of Learning to Clinical Teaching. 3 credits. \$15.

Study of learning situations in the basic professional program in nursing. Sources, selections, and organization of instructional materials; evaluation of nursing care; content and methods of clinical teaching; measurement of outcomes. Open to graduate nurses.

Spring Semester

T 6:20 Medical Sciences 113, Boyle

74 The Nurse's Role in Maintaining Emotional Health. 3 credits. \$15.

Study of the mental health principles and techniques involved in carrying out complete nursing care for patients. Special needs of the chronically ill and aged will be studied. Open to graduate nurses.

Fall Semester

W 6:20 Medical Sciences 113, Lediger

ENGLISH

English Placement Tests.

Admission to composition classes beyond Preparatory Composition is based on satisfactory score in English Placement Test, or satisfactory completion of Preparatory Composition. Please note the following: (1) If you took the Placement Test in a Minnesota high school within the last three 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 giving in addition to your name, the name of your high school and the date of graduation. (2) If you have not taken the test, or if you took the test more than three years ago, report for it at the following time and place.

7:00	Tuesday, September 26	Fall Semester	Room 216, Nicholson Hall
7:00	Tuesday, September 26		Room 206, St. Paul Extension Center
7:00	Wednesday, October 4		Room 216, Nicholson Hall
		Spring Semester	
7:00	Tuesday, February 6		Room 216, Nicholson Hall

Preparatory Composition. No credit. \$11.25.

Intensive drill on grammatical forms, structure, and theme writing. No prerequisite. Repeated during spring semester. Note Composition 4-5-6 below.

	Fall Semester		Spring Semester
T	6:20 Folwell 209, Stolz	T	6:20 Folwell 209, Stolz

Grammar Review. 3 Extension credits. \$15.

A "refresher" course for those who need a quick and thorough review of grammar, mechanics, and usage. More intensive than Preparatory Composition. Includes theme writing. No prerequisite.

	Fall Semester		Spring Semester
Th	6:20 Folwell 105, Lewis	Th	8:05 St. P. Ext. Center 219, Lewis

4-5-6 Freshman Composition. 4½ credits each semester. \$22.50.

This sequence satisfies the English requirement for graduation and is prerequisite to other English classes. Class meets for a period of 2½ hours each week. Prerequisite: Preparatory Composition or satisfactory score on English Placement Test, explained above.

	Fall Semester		Spring Semester
4-5	M 6:20 St. P. Ext. Center 219, White	4-5	W 6:20 Folwell 205, Jones
	T 6:20 Folwell 105, White	5-6	M 6:20 St. P. Ext. Center 219, White
	W 6:20 Folwell 105, del Plaine		T 6:20 Folwell 105, White
5-6	W 6:20 Folwell 205, Jones		W 6:20 Folwell 105, del Plaine

Com. 1a-2a-3a. 3 credits each unit. \$15 each quarter.

A practical course intended to prepare the student to communicate more effectively in speech as well as in everyday writing. Extensive practice in writing and in various kinds of speaking situations is accompanied by a study of how language actually functions to convey meaning. Since much opinion-forming communication is received through the mass mediums, the third term is devoted to the press, film, and radio in order to develop the student's power to receive such information with critical discrimination. The sequence is accepted by the University as meeting all requirements which are satisfied by English 4-5-6 (Freshman Composition). Class meets for a period of 2½ hours each week. Prerequisite: Preparatory Composition or satisfactory score on English placement test, as explained under English.

	Fall Quarter	Winter Quarter	Spring Quarter
1a	T 6:20 TNM 107, Allen	2a (same schedule as fall)	3a (same schedule as fall)

9 Technical Discussions. 3 credits. \$15.

Speech course for technical people, engineers, salesmen, foremen, doctors, nurses, analysts, and business executives. Lectures and practice with handling of technical materials, statistics, technical terms, specifications, visual methods and materials, expositions, descriptions, and processes. Of equal value to experienced speakers and beginners. Stress placed on small audiences, conferences, and interviews. No time spent on phonetics, general vocabulary, physiology of the voice producing mechanism, social speech, debate, or interpretative reading. Special help for special cases. Projects and problems based on the needs of the class. No prerequisite. Repeated spring semester.

	Fall Semester		Spring Semester
Th	7:00-9:30 Main Engineering 104, Lippert	Th	7:00-9:30 Main Engineering 104, Lippert

21-22-23 Introduction to Literature. 3 credits each quarter. \$15.

A chronological study of English literature with its historical background. An introduction to types of literature and literary ideas. 21: The Renaissance and the Rise of Puritanism. Marlowe, Spenser, Bacon, Browne, Milton, and Bunyan; 22: The Restoration and the Eighteenth Century. Dryden, Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding, and Sheridan; 23: The Romantic Movement and the Victorians. Wordsworth, Byron, Shelley, Keats, Lamb, Carlyle, Browning, and Arnold. Prerequisite: Composition 4-5-6 or exemption.

	Fall Quarter	Winter Quarter	Spring Quarter
21	T 6:20 Folwell 205, Moore	22 (same schedule as fall)	23 (same schedule as fall)

27-28 Advanced Writing. 3 credits each semester. \$15.

Offers training in the fundamentals of creative writing, through lectures and the criticism of manuscripts. Advanced Writing 27 deals with expository writing; articles, essays, criticism, etc. Advanced Writing 28 deals with description and narration. Students may begin with either 28 or 27. Prerequisite: Composition 4-5-6, or consent of instructor.

Fall Semester
27 T 8:05 Folwell 108, Rice

Spring Semester
28 T 8:05 Folwell 108, Rice

39 Twentieth-Century Novel. 3 credits. \$15.

The novel since Thomas Hardy. The course covers at least the following three English novels: Thomas Hardy's *Tess of the D'Urbervilles*, Joseph Conrad's *Victory*, Arnold Bennett's *The Old Wives' Tale*; and the following three American novels: Ernest Hemingway's *A Farewell to Arms*, Thomas Wolfe's *Of Time and the River*, John Steinbeck's *The Grapes of Wrath*. Prerequisite: Composition 4-5-6 or exemption.

Fall Semester
T 8:05 Folwell 110, Acker

55-56 Shakespeare. 3 credits each semester. \$15.

55: The reading of selected comedies—*A Midsummer Night's Dream*, *The Merchant of Venice*, *Much Ado about Nothing*, *Twelfth Night*, *Measure for Measure*, *The Tempest*, and others. 56: The reading of selected histories and tragedies—*Richard II*, *Henry IV*, 1 and 2, *Henry V*, *Julius Caesar*, *Hamlet*, *Macbeth*. Prerequisite: Composition 4-5-6 (or exemption) and 6 additional credits.

Fall Semester
55 W 8:05 Folwell 110, Christie

Spring Semester
56 W 8:05 Folwell 110, Christie

69-70 Short Story Writing. 3 credits each semester. \$15.

The technique of the short story with constructive work in story writing. Prerequisite: 27 and 28 or 29, or consent of instructor.

Fall Semester
69 Th 6:20 Folwell 205, Macdonald

Spring Semester
70 Th 6:20 Folwell 205, Davis

85 Present-day English. 3 credits. \$15.

Not a review of "school grammar" nor a course in composition, but a scientific introduction to the living language. Attention will be paid to the development of its vocabulary, its changing grammatical patterns, its sounds, and the basis of popular notions about "correctness" and "incorrectness." Open to students with Senior College standing and to others by permission. Graduate credit available upon completion of special work arranged in consultation with the instructor.

Spring Semester
M 6:20 Folwell 204, Allen

101-102 Seminar in Writing (Advanced Short Story). 3 credits each semester. \$15.

For advanced and professional students who write with facility and desire personal direction. Criticism of manuscripts submitted. Prerequisite: consult instructor.

Fall Semester
101 Th 6:20 Folwell 203, Davis

Spring Semester
102 Th 6:20 Folwell 203, Blum

120 Appreciation of Poetry. 3 credits. \$15.

Reading of a number of short poems, English and American, including some modern ones. Designed to increase the student's enjoyment and understanding of poetry. Prerequisite: Senior College standing and 6 credits in literature, exclusive of Classics and A-B-C; or consent of instructor.

Fall Semester
Th 6:20 Folwell 304, Blum

174 American English. 3 credits. \$15.

Historical development of the distinctive vocabulary of American English; lexical and phonetic differences between it and British English; dialect distribution in the United States, with special reference to the speech of the Middle West, including Minnesota. Open to students with Senior College standing and to others by permission.

Fall Semester
M 6:20 Folwell 204, Allen

Business English. See page 43.

Communication. See page 17.

Humanities. See page 24.

FAMILY LIFE

1 Preparation for Marriage. See Personal Orientation, page 28.

Modern Marriage Adjustments. See page 28.

Child Welfare courses. See page 16.

FRENCH**1-2 Beginning French.** 3 credits each semester. \$15.

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

Fall Semester	Spring Semester
1 W 6:20 Folwell 227, Sullivan	2 W 6:20 Folwell 227, Sullivan

3-4 Intermediate French. 3 credits each semester. \$15.

Readings from modern authors, review of essential grammar, emphasis on spoken French. Prerequisite: French 1-2 or 2 years of preparatory French.

Fall Semester	Spring Semester
3 M 6:20 Folwell 213	4 M 6:20 Folwell 213

17a-b French for Graduate Students. No credit. \$15.

Fundamentals of grammar; reading of appropriate prose. Prepares for examinations in French. No prerequisite for 17a; for 17b: 17a, or two years of French in high school or equivalent.

Fall Semester	Spring Semester
17a M 6:20 Folwell 102, Brackney	17a M 6:20 Folwell 124, Pulley
17b M 6:20 Folwell 124, Pulley	17b M 6:20 Folwell 102, Brackney

68-69 Advanced French Conversation. 3 credits each semester. \$15.

Informal discussion of current affairs and everyday topics. Prerequisite: consent of instructor.

Fall Semester	Spring Semester
68 W 6:20 Folwell 203, Fermaud	69 W 6:20 Folwell 203, Fermaud

GARDENING

For all classes in Gardening and Landscaping, see Agriculture, page 12.

GENERAL STUDIES

Com. 1a-2a-3a. See page 17.

F.L. 1 Preparation for Marriage. See page 28.

Modern Marriage Adjustments. See page 28.

Hum. 1, 2, 3, 4 Humanities in the Modern World I, II, III, IV. See page 24.

Hum. 11 The Greek Heritage. See page 24.

Hum. 12 The Roman and Medieval Heritage. See page 25.

Art I Introduction to Art (Understanding the Arts). See page 13.

Pers.Or. I How to Study. See page 28.

Soc.Sci. 1a-2a-3a. Introduction to Social Science. See page 37.

Phil. 71 Design for America. See page 29.

GEOGRAPHY**1 Geography of Physical Resources.** 5 credits. \$25.

The character, causes, and significance of regional differences in the world's physical resources. Not open for credit to students who have previously taken 11. Class meets for three-hour session. No prerequisite.

Fall Semester
T 6:20 Ford 209, Jennings

107 Geography of the Soviet Union. 3 credits. \$15.

The character of and bases for the regional diversity of physical resources, population, agriculture, manufacturing, and transportation in the U.S.S.R. Prerequisite: 5 credits in geography or consent of instructor.

Spring Semester
T 6:20 Ford 209, Borchert

GEOLOGY**1 General Geology (Dynamic).** 3 credits. \$15.**A Dynamic Geology Laboratory.** 2 credits. \$10.

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, and other economic mineral resources. No prerequisite.

Fall Semester

1 T 6:20 Pillsbury 210, Wright
A T 8:05 Pillsbury 22, Weiss

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

23 Mineralogy. 3 credits. \$15.

A study of the physical and chemical characteristics of minerals; occurrence, genesis, and uses. Determinative work and identification of minerals by physical tests. No prerequisite.

Fall Semester

Th 6:20 Pillsbury 110, Gardiner

24 Mineralogy. 3 credits. \$15.

A continuation of the study of physical and chemical characteristics of minerals; their occurrence, genesis and uses. Prerequisite: Geol. 23 if possible but the student may register without it.

Spring Semester

Th 6:20 Pillsbury 110, Gardiner

GERMAN

1-2 Beginning German. 3 credits each semester. \$15.

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

Fall Semester

1 T 6:20 Folwell 207, Menze

Spring Semester

2 T 6:20 Folwell 207, Menze

3 Beginning German. 3 credits. \$15.

Readings from modern authors, review of essential grammar, emphasis on spoken German. Prerequisite: German 1-2 or 2 years of high school German.

Fall Semester

T 6:20 Folwell 206, Ramras

4 Intermediate German. 3 credits. \$15.

Modern narrative prose. Prerequisite: German 3.

Spring Semester

T 6:20 Folwell 206, Ramras

17a-b German for Graduate Students. No credit. \$15.

Designed to help graduate students acquire a reading knowledge of German as required of candidates for higher degrees. Grammar is reduced to a minimum, with stress on recognition of forms encountered in reading. Rapid reading of simple, graded material. Intensive reading of more difficult material selected from the various fields of specialization. Detailed study of several sets of examinations in each of the fields. No prerequisite for 17a; for 17b: two years of German in high school, or equivalent.

Fall Semester

17a M 6:20 Folwell 206, Downs
17b M 6:20 Folwell 209, Wangsness

Spring Semester

17a M 6:20 Folwell 209, Downs
17b M 6:20 Folwell 206, Wangsness
17b M 6:20 Hort. 302, St. P. Campus,
Prottingeier

HEALTH

50 Personal and Community Health. 3 credits. \$15.

Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings. Open to students who have not taken 3, 4, 51, 52, 100 or G.C. 10C. No prerequisite.

Fall Semester

Th 6:20 Medical Sciences 111, Thomson

58 Maternal and Child Hygiene. 3 credits. \$15.

Trends in the health care of mothers during the maternity cycle and of the child from conception through the preschool years; health problems, public health programs, and other community facilities. Open to graduate nurses. Prerequisite: 53 or 100 and 62.

Spring Semester

W 6:20 Medical Sciences 111

59 Health of the School Child. 3 credits. \$15.

Mental and physical growth; prevention and control of diseases common to the school-age child; health appraisal; correction of physical defects; emotional problems; care of the handicapped; the school environment and its effect on child health; accident prevention and emergency care; practical problems of health supervision and administration. Prerequisite: consult instructor.

Spring Semester

Th 6:20 Medical Sciences 111, Thomson

100 Elements of Preventive Medicine and Public Health. 5 credits. \$25.

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. Prerequisite: 12 credits in biological science or consent of instructor.

Fall Semester

T 6:20 Millard 129, Cowan

HISTORY

Note—Although it is preferable that the units of these history classes be taken in sequence, students may register for credit in any single semester or quarter unit unless otherwise indicated.

1-2-3 Civilization of the Modern World. 3 credits each quarter. \$15.

1: The rise of the European state system as the framework within which Western civilization developed, and the economic, cultural, political, intellectual, and religious implications of the emerging system; 2: The struggle for control over the Western states system, and the emergence of liberal democracy in the modern world; 3: The impact of industrialism upon Western and world civilization, the origins and backgrounds of the twentieth-century world. No prerequisite. Class meets for 2½ hour period weekly.

Fall Quarter

1 T 6:20 Ford 104
W 6:20 St. P. Ext. Center 204

Winter Quarter

2 (same schedule as fall)

Spring Quarter

3 (same schedule as fall)

20-21-22 American History (or 59-60-61. See note below). 3 credits each quarter. \$15.

A survey of the political, economic, and social history of the United States with emphasis on the forces that resulted in the emergence of modern America. 20: Colonial and Early National Period; 21: Sectionalism and National Development; 22: Modern America. No prerequisite. Class meets for 2½ hour period weekly.

Note—Students wishing Senior College credit may register for History 59, 60, 61 with the approval of the instructor. Some additional work will be required for Senior College credit.

Fall Quarter

20 M 6:20 Ford 104

Winter Quarter

21 (same schedule as fall)

Spring Quarter

22 (same schedule as fall)

79a-79b Foundations of National Power. 3 credits each semester. \$15.

A discussion of the present and potential strength of the major powers in the world today and of the areas of possible conflict. 79a: A brief survey of the rise of the modern state system will be followed by a more detailed evaluation of the geographic, social, political and military factors that constitute the elements of national power. An analysis will then be made of those states lying in the Western European and Mediterranean regions. No prerequisite. 79b: An analysis of the power potentials of states lying in Eastern Europe, Asia, the Far East, and the Western Hemisphere, with emphasis on the Soviet Union and the United States. No prerequisite, but 79a is recommended for full understanding of 79b.

Fall Semester

79a Th 6:20 Ford 209, Bowditch

Spring Semester

79b Th 6:20 Ford 209, Bowditch

94-95 American Diplomatic History. 3 credits each semester. \$15.

94: Period of national development; including the Mexican, Civil, and Spanish American wars; 95: The United States as a world power. A study of American foreign policy during the twentieth century. The Open Door, Dollar Diplomacy, the Roosevelt Corollary, the Good Neighbor, and the First and Second World Wars. No prerequisite.

Fall Semester

94 M 6:20 Ford 209, Beatty

Spring Semester

95 M 6:20 Ford 209, Beatty

110 Europe in the Twentieth Century (formerly 66). 3 credits. \$15.

1918 to present. Background and causes of the First World War, history of Europe during four years of war, the Paris Conference and peace treaties, the new political and social order in central and eastern Europe, problems of the western democracies, the attempt at a new world order and its collapse, the background and history of the Second World War. No prerequisite.

Spring Semester

W 6:20 Ford 257, Deutsch

119 History of World War II (formerly 67b). 3 credits. \$15.

The breakdown of Nazi-Soviet relations; war in the East and at sea; decline of Axis fortunes; the U.S. entry; interrelation of European and Far Eastern wars; inter-allied relations; the battles of France and Germany; liquidation of the War; occupation problems and policies; affairs of the U.N.; relations of the victor powers and the peace settlements. No prerequisite.

Spring Semester

W 8:05 Ford 257, Deutsch

185d-186d Minnesota and the Northwest (formerly 97-98). 3 credits each semester. \$15.

Begins with the period of exploration and the French, British, and American occupation. The fur trader and the voyageur; Indian missionary efforts of all denominations. A survey of early settlement and frontier life as well as the political and economic conditions in the territory and young state up to 1890. No prerequisite for 185d; those who wish credit in 186d must have passed 185d, others may register as auditors in 186d.

Fall Semester

185d Th 6:20 St. P. Ext. Center 216, Nute

Spring Semester

186d Th 6:20 St. P. Ext. Center 216, Nute

HOUSING

Planning Your Modern Home. 2 Extension credits. \$10 plus 50 cents laboratory fee.

This is a nontechnical course prepared for those who plan to build, modernize, or redecorate their home. The course will review the principles of planning and decorating and will investigate modern materials and techniques. It is intended to explain modern trends in residential design and to evaluate new developments so that home planners may invest their money wisely. Twelve meetings. No prerequisite.

Fall Quarter

W 8:05 Murphy Aud., Graffunder

Drawing Your Modern Home. 2 Extension credits. \$10.

The purpose of this course is to enable you to put down on paper and in intelligible form the plans for a modern home which you may have been turning over in your mind. Practice in sketching and in the minimum essentials of drafting. Typical conventions. The course is designed to supplement the preceding course, Planning Your Modern Home, but the latter is not prerequisite. Twelve meetings.

February 13-May 1

T 8:05 Main Engineering 304, Heath

Architectural Drafting I-II. See page 55.

Interior Design. See Art, page 14.

Gardening and Landscaping. See page 12.

HUMANITIES

Note—Although it is preferable that the Humanities courses be taken in sequence, this is not a requirement and any single unit or combination of units will prove satisfactory to students who wish to make such a selection.

1-2 Humanities in the Modern World I-II. 3 credits each semester. \$15.

This course offers an introduction to the study of the humanities in the modern world. The materials used are history, prose criticism, literature, and art. The period dealt with is from time of Voltaire to the present. The readings will include such authors as: for course I, Voltaire, Goethe, Paine, Rousseau, Burke, Tolstoi; for II, Dostoevski, Mill, Malthus, Marx, Ibsen, Zola, Flaubert. No prerequisite.

Fall Semester

1 M 6:20 Ford 109

T 6:20 St. P. Ext. Center 204, Ames

Spring Semester

2 M 6:20 Ford 109

T 6:20 St. P. Ext. Center 204, Ames

3 Humanities in the Modern World III. 3 credits. \$15.

Science (especially the theory of evolution), religion, and humanism. Study and discussion of selected works by Matthew Arnold and T. H. Huxley; William James, *Essays in Pragmatism*; Nietzsche, *Thus Spake Zarathustra*; G. B. Shaw, *Back to Methuselah*; Turge-
nev, *Fathers and Sons*; Thomas Mann, *The Magic Mountain*.

Fall Semester

Th 8:05 Ford 3-4, Livingston

4 Humanities in the Modern World IV. 3 credits. \$15.

Science (especially Freudian psychology and anthropology), humanism, and the theory and practice of communism, fascism, and liberal democracy in the modern age. Study and discussion of Lenin, *State and Revolution*; Koestler, *Darkness at Noon*; Freud, *Outline of Psychoanalysis*; Benedict, *Patterns of Culture*; Ortega y Gasset, *Revolt of the Masses*; Camus, *The Plague*; Aldous Huxley, *Brave New World*.

Spring Semester

Th 8:05 Ford 3-4, Livingston

11 The Greek Heritage. 3 credits. \$15.

The heroic age of legend—epic poems; the golden age of Athens—tragedy, comedy, the struggle for power; the fourth century—philosophic comment on Greek political life. Readings: Homer, *Iliad* and *Odyssey*; tragedies of Aeschylus, Sophocles, and Euripides; Thucydides, *History of the Peloponnesian War*; comedies of Aristophanes; Plato, *Republic*; selections from Aristotle. No prerequisite.

Fall Semester

T 6:20 Ford 6, Livingston

12 The Roman and Medieval Heritage. 3 credits. \$15.

Epicureanism and stoicism; Roman jurisprudence and political organization; apostolic Christianity; the medieval synthesis. Readings: Lucretius, *On the Nature of Things*; Epictetus, *Enchiridion*; Marcus Aurelius, *Meditations*; Durant, *Caesar and Christ*; Barrows, *The Romans*; *New Testament*; St. Augustine, *Confessions*; Dante, *Divine Comedy* (*Inferno*); Chaucer, *Canterbury Tales*. No prerequisite.

Spring Semester

T 6:20 Ford 6, Livingston

ITALIAN**1a-2a Beginning Italian.** 3 credits each semester. \$15.

Emphasis on conversation. Prerequisite for 2a: Italian 1a or permission of instructor.

Fall Semester

1a T 6:20 Folwell 203, Nissen

Spring Semester

2a T 6:20 Folwell 203, Nissen

JAPANESE

See Linguistics, page 26.

JOURNALISM**13 Introduction to Reporting.** 3 credits. \$15.

Newspaper reporting—the nature of news, fact gathering, and news writing—is used as a vehicle in this course to introduce students to various kinds of journalistic writing. Its emphasis on conciseness, fact-selection, and color make it an appropriate prelude to magazine writing, radio writing, advertising copy writing, and other such forms. Prerequisite: English Composition 4-5-6 or exemption and permission of instructor.

Fall Semester

T 6:20 Murphy 311, Jensen

18 Principles of Advertising. 3 credits. \$15.

A basic foundation for beginners in advertising. Theory, principles, and functions of advertising. Relation of advertising to modern business organizations, schedules, campaigns. A survey of copy, layout, testing, and the laws affecting advertising. Prerequisite: consent of instructor.

Fall Semester

T 8:05 Murphy 308, Seehafer

73 Magazine Writing. 3 credits. \$15.

The writing of nonfiction articles for general and specialized periodicals, and newspaper feature articles; subjects and materials; analysis of manuscript markets; study of magazine policies and practices; training in editing procedures; use of pictures. Repeated in spring semester. No prerequisite.

Fall Semester

Th 6:20 Murphy 311, Kahm

Spring Semester

Th 6:20 Murphy 311, Kahm

78 Public Relations. 3 credits. \$15.

A survey of the techniques and practices of workers in the public relations field. The function of the public relations counsel and publicity expert and their relationship to the communications media, to employer and employee, consumer and citizen. The production of public relations programs and campaigns for business and industry, social work agencies, educational institutions, and government. Prerequisite: 13 or permission of instructor.

Fall Semester

W 8:05 Murphy 308, Emery

84 Mass Communications in Modern Society. 3 credits. \$15.

A study of the major agencies of mass communication—press, radio, and motion picture—and their role in the opinion-forming process. A survey of the rapid growth of these media; their structure; their interrelationships with publics and government. Methods developed recently by research specialists for analyzing and quantifying the content and readership or listenership of newspapers, periodicals, radio broadcasts, and motion pictures. Prerequisite: consent of instructor.

Fall Semester

Th 6:20 Murphy 302, Jones

86 Advertising Copy and Layout. 3 credits. \$15.

Advertising media; advertising appeals; techniques of writing advertising copy for newspapers, periodicals, direct mail, posters, brochures. Layout and typography for those media. The advertising campaign, retail and national. Limited to thirty students. Prerequisite: Jour. 18 or Advertising Practice or B.A. 88 or acceptable advertising experience and consent of instructor. (See note on page 26.)

Fall Semester

T 6:20 Murphy 308, Seehafer

87 Radio Advertising. 3 credits. \$15.

Radio advertising as related to the station, the network, the sponsor and advertising agency, the performer, and other broadcasting agencies. Time buying and selling; program selection. Radio advertising copy; development of campaigns. Attention to television as an advertising medium. Occasional lectures by advertising professionals. Limited to thirty students. Prerequisite: Jour. 18 or Advertising Practice or B.A. 88 or acceptable advertising experience and consent of instructor. (See note below.)

Spring Semester

W 6:20 Murphy 302, Seehafer

Note—In order that the students best qualified may be accepted under the limit of 30, registrations for this class will be accepted only provisionally and must be accompanied by a special form filled out by the applicant. Forms may be obtained from any Extension office. Students will be notified of their acceptance or rejection before the opening session. PLEASE REGISTER EARLY.

B.A. 188 Advertising. See Business Classes, page 43.

Creation of Advertising. See Business Classes, page 43.

LIBRARY SCIENCE**151 Invention and Spread of Printing.** 2 credits. \$10.

History of the development of printing and its spread to the end of the sixteenth century. No prerequisite. Twelve meetings.

Fall Quarter

W 6:20 Library 5, Shove

152 History of Printing to Modern Times. 2 credits. \$10.

The development and spread of printing and the publishing industry, 1600-1900. Twelve meetings. No prerequisite.

Winter Quarter

W 6:20 Library 5, Shove

LINGUISTICS**1-2 Beginning Colloquial Arabic.** 3 Extension credits (see note below) each semester. \$15.

The course will include only the essentials of grammar with chief emphasis on pronunciation and practice in conversation. The Lebanese dialect will be stressed but others will be considered, such as Egyptian and Arabian. No prerequisite.

Note—S.L.A. credit in Classics may be granted qualified students upon petition; consult instructor.

Fall Semester

1 W 6:20 Folwell 113, Farah

Spring Semester

2 W 6:20 Folwell 113, Farah

1-2 Beginning Japanese. 3 credits each semester. \$15.

Introduction to conversational Japanese using romaji. Reading of Japanese texts. Instruction in writing of characters. Use of Chinese-Japanese character dictionary.

Fall Semester

1 M 6:20 Folwell 104, Syro-Boiarsky

Spring Semester

2 M 6:20 Folwell 104, Syro-Boiarsky

51-52 Reading in Japanese. 3 credits each semester. \$15.

Study of grammatical construction; drill in conversation; reading Japanese text. Prerequisite: Japanese 1-2 or consent of instructor.

Fall Semester

51 M 8:05 Folwell 104, Syro-Boiarsky

Spring Semester

52 M 8:05 Folwell 104, Syro-Boiarsky

1-2 Russian Reading. 3 credits each semester. \$15.

A beginning course with emphasis on reading. Comprehensive discussion of the Russian grammatical system, with special stress on the recognition of forms and the structure of the sentence. Interpretation and translation of easy texts. This course aims to give a general working knowledge of Russian and the basic preparation for reading tests required of graduate students in their specific fields. No prerequisite for 1. Prerequisite for 2: 1 or consent of instructor.

Fall Semester

1 M 6:20 Folwell 113, Blinoff

Spring Semester

2 M 6:20 Folwell 113, Blinoff

MATHEMATICS

For all mathematics classes, see page 56.

MUSIC

Practical Music.

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 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 *Class Schedule*. For further information consult any office of the General Extension Division.

Enjoying Music (G.C. 24A-B). 3 General College or Extension credits each semester. \$15.

This is a class for those who wish to develop or increase their enjoyment and understanding of music as a means toward life enrichment. The lectures are carefully and completely illustrated by recordings. Students registered for this class are cordially invited to come early (any time between 7:00 and 8:00), during which time the instructor or an assistant will be present to play whatever recordings students may care to select from the extensive record library of the General College. Students may enter either semester. No prerequisite. Limited to 50 students.

Fall Semester

T 8:05 Nicholson 111, Hill

Spring Semester

T 8:05 Nicholson 111, Hill

34-35-36 History of Music. 3 credits each semester. \$15.

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. The class covers the history of music from Ancient Greece to the present day; it begins with Bach, continues to the twentieth century, and then reverts to the earliest period. Extensive musical illustrations. No prerequisite.

Fall Semester

35-36 Th 6:20 Scott Hall 104

Spring Semester

36-34 Th 6:20 Scott Hall 104

40-41-42 University Symphony Orchestra. 1½ credits each semester. \$7.50.

Standard orchestral literature is performed. Open to players of orchestral instruments. Prerequisite: consent of instructor. Students enrolled in this course with the consent of the chairman of the Department of Music are given the opportunity of rehearsing with the University Symphony Orchestra and participating in several concert presentations during the year.

Fall Semester

40-41 T 7:00 Northrop Aud., Oberg

Spring Semester

41-42 T 7:00 Northrop Aud., Oberg

43-44-45 University Chorus. 1½ credits each semester. \$7.50.

The University Chorus is available to Extension students through the General Extension Division. Students may register for any unit number either semester upon consent of director.

Fall Semester

T 7:00 Nicholson Aud., Aliferis

Spring Semester

T 7:00 Nicholson Aud., Aliferis

Piano Playing for Pleasure I-II-III. 3 Extension credits each semester. \$15 plus \$3 laboratory fee.

It is easy to play the piano. Within a semester's time enough of the art may be acquired to enable one to enjoy playing for one's own pleasure. The fundamentals will be taught to individuals in small groups. Visual aids are used extensively in the instruction. Two sections limited to 20 students each: Section I open to beginners without previous musical training; section II-III open to more advanced players. Students may register for two semesters in the advanced section.

Fall SemesterI M 6:20 Scott Hall 104, Twichell
II-III M 8:05 Scott Hall 104, Twichell**Spring Semester**I M 6:20 Scott Hall 104, Twichell
II-III M 8:05 Scott Hall 104, Twichell

NATURAL HISTORY

Birds of Minnesota. No credit. \$15.

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 on *Sunday mornings at 7:30*. No prerequisite.

Spring Semester

Th 6:20 Museum of Natl. Hist. 309, Breckenridge

Fish and Fishing in Minnesota. Extension credit by special arrangement. \$9.

A short course for sportsmen and others who want accurate—but nontechnical—knowledge of Minnesota fish; their habits and habitats, their feeding and propagation, their distribution and importance. Lectures, films, demonstrations, and discussions. 10 meetings beginning February 21. Enrolment limited to 100 accepted in order of registration. No prerequisite.

February 21–April 25

W 8:05 Zoology 313, Eddy

Wild Game of Minnesota. 2 Extension credits. \$10.

A nontechnical survey of the upland game birds, waterfowl and mammals, particularly the fur bearers and big game of Minnesota; their habits, characteristics, and requirements. Recognition and conservation of principal game species will be discussed. Illustrated lectures and demonstrations. 12 meetings. No prerequisite.

Fall Quarter

W 6:20 Museum of Natl. Hist. 309, Gunderson

PERSONAL ORIENTATION**1 How to Study.** 3 Extension credits or 2 S.L.A. credits (see below). \$15.

Practical assistance to the student in developing efficient study habits, organizing materials, training the memory, preparing for examinations, and improving the speed and comprehension of reading. This course should be of special value to veterans and others who are planning an educational program and have not engaged in organized study for an extended period. Two credits may be granted in S.L.A. with consent of instructor. Class limited to 35. No prerequisite. Repeated spring semester.

Fall Semester

M 6:20 TSF 109, Melton
Th 8:05 TSF 109, Melton

Spring Semester

M 6:20 TSF 109, Melton
Th 8:05 TSF 109, Melton**Efficient Reading.** 3 Extension credits. \$15 plus \$2 materials fee.

Designed for students, business, or professional people of up-to-average reading ability who wish to improve their reading speed and comprehension. Emphasis is on reading techniques of particular use in achieving or maintaining superior scholastic or professional status. Maximum use is made of the tachistoscope and the Harvard Reading Films, two recently developed visual aids. Parallels Efficient Listening and is a suggested follow-up for How to Study. No prerequisite. Class is limited to 30. Repeated spring semester.

Fall Semester

W 6:20 Wesbrook 201, Brown
W 8:05 Wesbrook 201, Brown
Th 6:20 Wesbrook 201, Wright
Th 8:05 Wesbrook 201, Wright

Spring Semester

W 6:20 Wesbrook 201, Brown
W 8:05 Wesbrook 201, Brown
Th 6:20 Wesbrook 201, Wright
Th 8:05 Wesbrook 201, Wright**Efficient Listening.** 3 Extension credits. \$15.

The primary emphasis in this course is upon efficient listening to instructive and directive speech. Of particular value to those who wish to improve concentration when listening to lectures, dictated material, instructions orally presented. Half of each class session is occupied with lectures on such topics as inefficient listening and its causes, the desire to learn and learning economy, the elements of concentration, speech structuralization, comprehension of main points, four usable systems of note-taking and emotional adjustment to the speaker and his thesis. The other half of each class session is devoted to student performance.

Fall Semester

M 6:20 Folwell 12, Nichols

Spring Semester

M 6:20 Folwell 12, Nichols

F.L. 1 Preparation for Marriage. 3 credits. \$15.

A discussion of the function of the family today, problems of dating and courtship, the engagement, selection of a mate, relations of husband and wife, family crises and bases of marital stability. No prerequisite. Limited to 35 students.

Fall Semester

T 6:20 TSF 157, Neubeck

Spring Semester

T 6:20 TSF 157, Dyer

Modern Marriage Adjustments. 3 Extension credits. \$15 plus \$1 materials fee.

A course designed for married people which gives consideration to selected problems of present-day married life, such as: management of family income, planning for children, compatibility, crises, etc. Illustrative films and case materials are used. Opportunity for individual conferences with the instructor is provided. Limited to 15 students. No prerequisite.

Fall Semester

T 6:20 TSF 159, Dyer

Practical Speaking. See page 40.**Application of Psychology to Living Ia.** See page 33.**Common Legal Problems.** See page 44.

PHILOSOPHY

1 Problems of Philosophy. 3 credits. \$15.

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

Fall Semester
M 8:05 Folwell 322, Brodbeck

Spring Semester
Th 6:20 Folwell 322, Holmer

2 Logic. 3 credits. \$15.

There is a difference between "straight" and "crooked" thinking. Logic is the study of these differences. What pitfalls beset the attempt to think straight? When is a term properly defined? Why are sound definitions important? 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? Through systematic analysis of these and other related questions, the study of logic will show you what is involved in straight thinking. No prerequisite.

Fall Semester
W 6:20 Folwell 322, Terrell

Spring Semester
T 8:05 Folwell 305, Brodbeck

3 Ethics. 3 credits. \$15.

Problems of life in terms of (1) contemporary social, political, and economic forces, and (2) the character of the individual; the psychological and philosophical foundations of morality; the reconstruction of morality; the history of morals and ethical thought. No prerequisite.

Fall Semester
T 6:20 Folwell 322, Hospers

Spring Semester
M 6:20 Folwell 322, Holmer

54 Introduction to the Scientific Way of Thinking. 3 credits. \$15.

This class endeavors to clarify the meaning of modern science by examining its basic concepts, methods, and presuppositions. Only through such an integrative understanding can the dangers connected with high specializations be counteracted. Among the topics discussed are: principles of mature thinking; scientific procedures such as observation, measurement, experimentation, logical and mathematical reasoning, description, explanation, statistics, etc.; outstanding theories and problems of science; science, philosophy, religion, and social issues; the unity of science. No prerequisite.

Fall Semester
Th 6:20 Folwell 322, Feigl

71 Design for America. 3 credits. \$15.

A discussion of the aims of American life with the future as a frame of reference. Potentialities in economics, politics, art, science, and education in their interrelations. Student and faculty participation is stressed. No prerequisite.

Fall Semester
W 6:20 Folwell 305, Wiggins

87 Readings in Religious Classics. 3 credits. \$15.

A course designed to acquaint the general reader with several of the best literary expressions of religion. No attempt will be made to settle theological or sectarian issues. Emphasis will be placed on the understanding of each author's work as it relates to his life and that of his contemporaries. Selected readings are planned from the following works of authors of diverse temperament, persuasion, time and place: Augustine's *Confessions*, St. Francis' *Little Flowers*, Luther's *On Christian Liberty*, Pascal's *Pensees*, and Kierkegaard's *For Self-Examination*. No prerequisite.

Fall Semester
W 8:05 Folwell 305, Holmer

135 Philosophy in Modern Literature. 3 credits. \$15.

A survey of basic philosophical ideas in modern civilization as they are expressed in major works of literature. No prerequisite.

Spring Semester
W 6:20 Folwell 305, Terrell

Comparative Religious Thought Today, III-IV. 3 Extension credits each semester. \$15.

These courses have been organized to provide speakers from thirty different religious groups through the full year. There will be opportunity for discussion at each class session. The double course has been divided into four main sections: (1) The Religions, (2) The Christian Divisions, (3) The Protestant Divisions, and (4) The Additional Movements. III—(1) The Religions: Hinduism, Buddhism, Confucianism, Shintoism, Judaism, Christianity, Mohammedanism, Bahai; (2) The Christian Divisions: Primitive Christianity, Roman Catholic, Greek Orthodox, Conservative Protestant, Liberal Protestant, Neo-Orthodox, Unitarian. IV—(3) The Protestant Divisions: Lutheran, Presbyterian, Episcopal, Baptist, Congregational, Methodist, Friends, Jehovah's Witness; (4) The Additional Movements: Humanist, Christian Science, Unity, Spiritualism, Theosophy, Mormon, Father Divine. No prerequisite for either III or IV.

Fall Semester
III T 8:05 Nicholson 211, coordinator:
Swanson

Spring Semester
IV T 8:05 Nicholson 211, coordinator:
Swanson

PHOTOGRAPHY

Students in all Photography classes must furnish their own cameras.

Owing to the limited laboratory facilities available for the Beginning and Advanced Cameracraft classes, and in order that students best qualified may be accepted under the limits indicated, registrations for these will be accepted only provisionally.

1. The Beginning course will be limited to 24 students and the Advanced to 16.

2. Registrations will be accepted only provisionally and must be accompanied by a special questionnaire filled out by the applicant.

3. Through the questionnaires, selected lists will be made of students qualified for either the Beginning or Advanced courses. These students will be notified in time to permit them to appear at the first class session.

4. If more than the maximum admissible number of students for either class are selected as qualified through the questionnaires, a further selection by means of special tests may be necessary at the time of the first class session.

Beginning Cameracraft. 3 Extension credits. \$15 plus \$5 laboratory fee.

A course for real beginners, those with little or no experience. Work will be about evenly divided between assigned experiments, approved personal projects, and lectures and demonstrations. Class enrolment limited to 24 selected students (see note above).

Fall Semester

M 6:20 Murphy 20, Leibling

Spring Semester

M 6:20 Murphy 20, Leibling

Advanced Cameracraft. 3 Extension credits. \$15 plus \$5 laboratory fee.

A course for established amateurs with some experience and familiarity with special photographic equipment and techniques. Work will include some assigned projects, lectures and demonstrations, but special attention will be given to individual interests and requirements. Class enrolment limited to 16 selected students (see note above).

Fall Semester

W 6:20 Murphy 20, Downs

Spring Semester

W 6:20 Murphy 20, Downs

Applied Photography I. 3 Extension credits. \$15 plus \$2.50 laboratory fee.

A course designed for practicing amateur photographers who wish to improve their skill in all fields of monochrome photography. In addition to lectures and demonstrations, students will have an opportunity to work in laboratory classes under the guidance of an experienced instructor. Time will be devoted to portraiture, architecture, landscape, news and illustration photography. There will be lecture and laboratory periods on retouching, mounting, and darkroom work. Enrolment limited to 25 students. Prerequisite: Beginning Cameracraft or equivalent with consent of instructor. *Students must have adequate access to darkroom facilities.*

Fall Semester

W 7:00 Wesbrook 3, Webb

Applied Photography II. 3 Extension credits. \$15 plus \$2.50 laboratory fee.

This course is designed for those who wish to become proficient in the growing field of color photography. Lectures and laboratory periods on all phases of photography, darkroom work, and photofinishing in the color medium. Field trips under the instructor's supervision will replace some class sessions. Enrolment limited to 25 students. Prerequisite: Applied Photography I or equivalent with consent of instructor. *Students must have adequate access to darkroom facilities.*

Spring Semester

W 7:00 Wesbrook 3, Webb

Motion Picture Photography. 3 Extension credits. \$15 plus \$2.50 laboratory fee.

Designed to meet the needs of teachers interested in the visual field and amateur motion picture photographers in general. The course will cover the requirements of good cinematography, with laboratory sessions on proper editing techniques, special effects, and titling. The student will be required to expose approximately three 100-foot rolls of 16 mm. or three 25-foot rolls of 8 mm. motion picture film. These movies will be criticized periodically by the instructor. Beginning photography desirable but not essential. Enrolment limited to 25 students.

Fall Semester

Th 7:00 Wesbrook 3, Stallings

Motion Picture Laboratory. 3 Extension credits. \$15 plus \$7.50 laboratory fee.

This course is designed for the advanced amateur who needs practical experience in motion picture production. The class produces a 16 mm. motion picture on a subject chosen by the instructor. All phases of work including actual photography, editing, and directing are included. All film and material are furnished by the Extension Division. Narrative sound is added to the picture if time allows. Prerequisite: Motion Picture Photography or equivalent in experience with approval of instructor.

Spring Semester

Th 7:00 Wesbrook 3, Stallings

PHYSICS

1-2†-3 Introduction to Physical Sciences. 3 credits each quarter. \$15.

Lectures and experimental demonstrations of the principles underlying physical phenomena. A course designed for those who wish a general cultural introduction to physics but do not plan to major in that subject. Physics 1 (mechanics); Physics 2 (heat, electricity and modern physics); Physics 3 (acoustics, optics, and modern physics). Class meets for 2½ hours. Prerequisite: high school algebra and plane geometry.

1 T 7:00 **Fall Quarter** Physics 166, Christensen 2 **Winter Quarter** (same schedule as fall) 3 **Spring Quarter** (same schedule as fall)

1a-2a†-3a Introduction to Physical Sciences. (With laboratory included.) 4 credits each quarter. \$20.

The complete sequence 1a-2a-3a fulfills the laboratory-science group requirement in S.L.A. Lecture group meets with class described above. Eight 2-hour laboratory periods scheduled for the quarter. Prerequisite: high school algebra and plane geometry.

1a Th 7:00 **Fall Quarter** Physics 153 2a **Winter Quarter** (same schedule as fall) 3a **Spring Quarter** (same schedule as fall)

Practical Laboratory Instrumentation. See Chemistry, page 16.

POLITICAL SCIENCE

Note—Qualified students may petition for graduate credit in political science courses numbered over 50. Action should be taken as soon as class begins. Consult Students' Work Committee for correct procedure.

1 American Government and Politics: Part I. 3 credits. \$15.

All of us are aware of the impact of international events upon the American system of government and the tremendous part that government plays in our lives. This course is designed to provide an intelligent understanding of certain fundamental features of our governmental system: the nature of our constitution, the protection of individual rights and liberties, political parties, public opinion, nominations and elections. Special attention will be given throughout to current developments. No prerequisite.

Fall Semester

T 6:20 Ford 2, Christensen

2 American Government and Politics: Part II. 3 credits. \$15.

Recognizing that the American citizen must have an understanding of our system of government if he is to play an active and intelligent part in helping it meet the problems of the future, this course is designed to provide a description, analysis, and evaluation of the legislative, executive, and judicial branches of our government (national, state, and local) with special attention to current developments. No prerequisite. (See note above.)

Spring Semester

M 6:20 Ford 2, Taylor

7 Comparative European Government. 3 credits. \$15.

An introduction to, and analysis of, the government and politics of Europe, particularly of England, France, Italy, Germany and the Scandinavian countries. Attention will be given to fundamental principles, institutional character and tendencies, parties and contending ideologies, the internal power relations, etc.

Fall Semester

M 6:20 Ford 5, Eriksen

15 Elements of Political Science. 3 credits. \$15.

An introductory study of the state, sovereignty and liberty, constitutions, the forms of government, and the functions of the state; principles and practices, purposes and institutions, the place which the modern state should occupy in society and the means of the attainment of that position. No prerequisite.

Fall Semester

T 8:05 St. P. Ext. Center 217, Tucker

25 World Politics. 3 credits. \$15.

Significance of contemporary events abroad and their effect on American interests. Implications of the Yalta, San Francisco, Potsdam, and other conferences. Schedule of lectures will be altered to explain current developments and trace causes. No prerequisite.

Fall Semester

W 6:20 Ford 103, Mills

55 Government of the Soviet Union. 3 credits. \$15.

An analysis of the government and politics of Soviet Russia that seeks to explain the rise of Bolshevism; the sources and nature of its ideology; the history of the Communist regime, institutional character; the organization of power; the role of the party; foreign, economic, and cultural policies; significance for Western Civilization. No prerequisite. (See note above.)

Spring Semester

M 6:20 Ford 3-4, Turner

† See Information, page 5.

60 Principles of Public Administration. 3 credits. \$15.

Public administration is about people. In fact, public administration in a real sense may be regarded as the development of people. The emphasis in this course is on the organization of people in administrative activities; the sociology of administration or how people behave in administrative groups; the problems of coordination of administrative groups and activities; the relations between central and field organization; communications; and the structure and practice of administrative authority. There will be special lectures by administrative officials, federal, state, and local. No prerequisite. (See note on page 31.)

Fall Semester

T 6:20 Ford 3-4, Warp

61 Municipal Law and Administration. 3 credits. \$15 plus \$1 materials fee.

General principles of municipal administration; forms of administrative organization and control; the framework within which municipal government operates, including home-rule charters and state statutes; liability of the municipality and its officers for wrongful acts; specific administrative services, such as personnel, budgeting and finance, research and planning, and public reporting. Intended primarily for persons in municipal government, the course is of interest also to citizens seeking a better understanding of how municipal government is administered and the important work it performs. Emphasis throughout is on Minnesota law and practice. No prerequisite. (See note on page 31.)

Fall Semester

M 6:20 St. P. Ext. Center 217, Peterson

65 Government of Minnesota. 3 credits. \$15.

An analysis of the structure and functions of state units. Discussion of such problems as legislative organization and procedure; the executive and the administration; personnel problems; political parties; taxation and finance. Emphasis on the changing relationships between city and state, and state and nation. No prerequisite. (See note on page 31.)

Spring Semester

T 8:05 St. P. Ext. Center 217, Tucker

75 Local Government in the United States. 3 credits. \$15.

The status and importance of local government in the United States; city governmental, administrative, and political organization; city and county politics and "bosses"; the problem of city government reorganization with special reference to the Twin Cities; the campaign for the council-manager type of city government; the functions of local government—law enforcement, public welfare, housing and city planning, etc.; city financial organization and problems; threats to municipal home rule. No prerequisite. (See note on page 31.)

Fall Semester

Th 8:05 Ford 5, Tucker

76 Business and Government. 3 credits. \$15.

A survey of the impact of government on the American economy. Topics dealt with include factors conditioning the role of government, the problem of depressions, labor and government, government and agriculture, monopoly and giantism, public utility regulation, financial controls, conservation, public ownership, and national economic planning. Attention is focused on current major economic issues of national interest and public policy. (See note on page 31.)

Spring Semester

M 6:20 Ford 5, Warp

77 Recent Social Legislation. 3 credits. \$15.

Federal, state, and local programs in the field of public assistance and social security, with particular emphasis on the major programs of the Social Security Act, health insurance, and housing. No prerequisite. (See note on page 31.)

Spring Semester

T 6:20 Ford 103, Christensen

85 Problems of World Politics. 3 credits. \$15.

Continuation of Political Science 25 which, however, is not prerequisite. Special attention to the Far East, the Near East, and Europe. No prerequisite. (See note on page 31.)

Spring Semester

W 6:20 Ford 103, Mills

98 Conduct of American Foreign Relations I. 3 credits. \$15.

Organization and work of the Department of State, trends in recent reorganizations; the Foreign Service; diplomatic and consular functions and problems; special foreign affairs agencies; relations with international organizations. No prerequisite. (See note on page 31.)

Fall Semester

T 6:20 Ford 5, McLaughlin

99 Conduct of American Foreign Relations II. 3 credits. \$15.

Treaties and executive agreements; the role of public opinion, political parties and pressure groups, Congress and Congressional committees, and executive leadership in the formation of foreign policy; the problem of democratic control of foreign policy; analysis of procedures and controlling forces in recent examples of American foreign policy. No prerequisite. (See note on page 31.)

Spring Semester

T 6:20 Ford 5, McLaughlin

PSYCHOLOGY

1a Application of Psychology to Living. 3 credits. \$15.

This course is devoted to psychology in personal relationships and in the achievement of mental health. It centers, for the most part, around our fundamental needs—the source of all our actions and satisfactions—and it presents principles highly applicable in the life of every person. This course has no prerequisite, and it may be taken with the same satisfaction before or after Psychology 1-2. Repeated spring semester. Elective credit in S.L.A. Not to be confused with Elem.Psy. A.

Fall Semester		Spring Semester	
M	6:20 St. P. Ext. Center 206, White	T	4:20 Nicholson Hall 207, White
T	6:20 Nicholson Hall 213, White	T	8:05 Nicholson Hall 213, White
Th	8:05 Nicholson Hall 213, White	Th	6:20 Nicholson Hall 213, White

1-2† General Psychology. 3 credits each semester. \$15.

This course is designed to orient the student to the whole field of psychology. Its emphasis is upon methods of investigation. Required for most other courses in psychology. No prerequisite.

Fall Semester		Spring Semester	
1	W 6:20 Nicholson Hall Aud., White	2	W 6:20 Nicholson Hall Aud., White
F	7:00 St. P. Ext. Center 206, White	F	7:00 St. P. Ext. Center 206, White

4-5† Introductory Laboratory Psychology. 2 credits each semester. \$15.

Experiments illustrating the subject matter and methods of the psychology of today. Each student interprets his own performances with respect to general ability, special abilities (mechanical, clerical, artistic, etc.), interests, and personality traits. Supplies the laboratory experience necessary for using psychology as the natural science requirement in the Junior College. May be taken with or after Psychology 1-2.

Fall Semester		Spring Semester	
4	W 8:05 Psychology 211, Jones	5	W 8:05 Psychology 211, Jones

119 Psychology of Personality. 3 credits. \$15 plus \$1 laboratory fee.

Designed to dissolve the halo of mystery surrounding the concept of personality, to the end that persons may better understand themselves and those they influence. Personality factors in relationship to business, family, and marital life. Special study of the many conditions, cultural and biological, which produce the varied traits distinguishing one person from another. Emphasis upon the importance of early experiences in forming character. Prerequisite: Psychology 1-2.

Fall Semester	
W	8:05 Psychology 115, Heron

122-123† Vocational Development and Personnel Psychology. 3 credits each semester. \$15 plus \$1 laboratory fee.

Deals with selecting, counseling, training, and maintaining an efficient labor force in industry. Theory and practice of giving, interpreting, and evaluating psychological tests and of interviewing; constructing and using rating scales; training, maintaining, and promoting employees. There will also be actual practice in the use of psychological tests. Not open for credit to those who have taken Psychology 160-161 for credit. Prerequisite: consent of instructor.

Fall Semester		Spring Semester	
122	M 6:20 Psychology 211, Longstaff	123	M 6:20 Psychology 211, Longstaff

125-126 Psychology of Individual Differences. 3 credits each semester. \$15.

Asks how and why people differ. Deals with factors such as age, sex, race, heredity, and environment and how these are related to differences in ability and temperament. These differences are important in personnel work, vocational counseling, and in industrial relations. May be used for elective credit toward a Certificate in Industrial Relations. Prerequisite: Psychology 1-2.

Fall Semester		Spring Semester	
125	T 6:20 Psychology 115, Jenkins	126	T 6:20 Psychology 115, Jenkins

144-145† Abnormal Psychology. 3 credits each semester. \$15.

Normal and abnormal behavior contrasted; varieties of maladjustment, or inadequacies of personality as shown in everyday life, contrasted against the background of neurotic and psychotic persons in order to consider programs of mental hygiene. Prerequisite: Psychology 1-2.

Fall Semester		Spring Semester	
144	M 8:05 Psychology 115, Schofield	145	M 8:05 Psychology 115, Schofield

167 Psychology of Attitudes and Public Opinion. 3 credits. \$15.

Emphasis is placed on how opinions develop and on social aspects of polling as well as on such survey techniques as sampling methods and question formulation. Application of polling methods to consumer studies and to measurement of industrial morale is considered. No prerequisite; elementary statistics desirable.

Spring Semester	
Th	6:20 Psychology 115, Jones

† See Information, page 5.

RADIO

Writing for Radio and Television I. 3 Extension credits. \$15 plus \$1 laboratory fee.

Up-to-date instruction in writing for both radio and television; fundamentals of technique of writing for the ear (radio) and for both eye and ear (television) stressed throughout the 17 weeks of writing actual script. Students alerted to constant changes in both mediums. Designed for radio and television writers or those who plan to do such writing, for educators, advertising men and women, public service executives, anyone interested in communication. Participants are urged to select script subjects that fit their particular interests or jobs. The student begins with short announcements, and progresses through the various announcement forms into short and longer programs of drama, comedy, interviews, music, etc. Cultural, entertainment, and advertising values maintained throughout. Handling of radio sound effects and music. Making the television camera work for you. Constant survey and discussion of current radio and television with emphasis on new developments in each. Selected work presented in "audition" program each semester. Particular scripts may be presented on KUOM or other suitable stations. Prerequisite: a good command of English. Repeated spring semester.

Fall Semester

T 6:20 Murphy 302, Weaver

Spring Semester

T 8:05 Murphy 302, Weaver

Writing for Radio and Television II. 3 Extension credits. \$15 plus \$1 laboratory fee.

Basic plan: writing a series of 15-minute or longer programs for consecutive presentation. The course may be used by active script writers to get unhampered criticism of their work before it is submitted to station or network, or sponsoring agency or business firm. Frequently used as refresher course by writers and former students. Emphasis on skillful use of the elements of the respective mediums: in radio, the spoken word, sound effects, and music; in television, the camera, or visual appeal, plus the spoken lines, sound effects, and music. Participants are urged to set up projects in their own fields of interest or employment. Experimentation in new program patterns encouraged. Selected work presented in "audition" program each semester. Approved scripts frequently presented on KUOM or other suitable stations. Prerequisite: I to precede II, II to precede III.

Spring Semester

T 6:20 Murphy 302, Weaver

Writing for Radio and Television III. 3 Extension credits. \$15 plus \$1 laboratory fee.

Writing for Radio and Television III for those who have completed I and II or equivalent in advanced writing can be offered if a sufficient number enroll.

Fall Semester

T 8:05 Murphy 302, Weaver

Radio Speech (Speech 65). 3 credits. \$15 plus \$1 laboratory fee.

Speech and psychology of radio; announcing; interpretative reading, voice, diction, articulation, and pronunciation. Practice, exercises, projects, and reports on problems of appeal and audience response. Voice recordings will be made. Enrolment limited to 25. Repeated spring semester. Prerequisite: Speech 1-2, or consent of instructor.

Fall Semester

W 6:20 Station WCCO, Ziebarth

Spring Semester

W 6:20 Station WCCO, Ziebarth

Radio Drama (Speech 66). 3 credits. \$15.

A study of the methods and techniques involved in the production of radio dramatic programs. Students participate in all phases, including acting, sound effects, music selection, script analysis and production directing. Prerequisite: Speech 1-2 or consent of instructor.

Fall Semester

W 6:20 Murphy 302, Engar

RECREATION

Note that the recreational activities are offered in three groups: for women only, for both men and women, for men only. Unless otherwise designated, all classes meet one hour per week, carry no credit, and require no prerequisites.

Activities Open Only to Women**Golf (Beginning)—for Women.** \$7.50 plus \$1.75 special fee.

Class and individual instruction in the use of the brassie, midiron, mashie, and putter. Discussion of rules, golf etiquette, and terminology. Last few lessons in spring at University Golf Course. Sections limited to 20. Equipment (clubs and soft balls) furnished by students. Repeated spring semester.

Fall Semester

T 5:30 Norris Gym. 60, Jaeger

T 6:30 Norris Gym. 60, Jaeger

Spring Semester

T 5:00-5:45 Norris Gym. 60

T 5:45-6:30 Norris Gym. 60

T 6:30-7:15 Norris Gym. 60

F 5:00-5:45 Norris Gym. 60

Golf (Intermediate)—for Women. \$7.50 plus \$1.75 special fee.

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. Sections limited to 20. Prerequisite: some knowledge of and experience in golf.

	Spring Semester
Th 5:00-5:45	Norris Gym. 60, Jaeger
Th 5:45-6:30	Norris Gym. 60, Jaeger
Th 6:30-7:15	Norris Gym. 60, Jaeger
F 5:45-6:30	Norris Gym. 60
F 6:30-7:15	Norris Gym. 60

Body Building for Women. \$7.50 plus \$1.75 special fee.

Rhythmic exercise, group and individual, for general body control with special emphasis on streamlining the figure: posture, carriage, and relaxation. Repeated spring semester.

Fall Semester	Spring Semester
T 5:30 Norris Gym. 153, Wilson	T 5:30 Norris Gym. 153, Wilson

Swimming for Girls. \$7.50 plus \$1.75 special fee.

A course in swimming for girls between the ages of 6 and 12 years. A health examination for which a fee of 50 cents is charged will be given at the first class meeting. Second meeting will be for the purpose of classifying swimmers into the following groups: beginners; advanced beginners (those who are at home in shallow water); intermediate swimmers (those who are at home in deep water). Swimmers may bring their own suits. Caps are required for all swimmers. Classes are limited to 20 girls in each section.

Fall Semester	Spring Semester
Beginners	Beginners
S 8:45-9:30 Norris Gym. 51	S 8:45-9:30 Norris Gym. 51
Advanced Beginners	Advanced Beginners
S 9:30-10:15 Norris Gym. 51	S 9:30-10:15 Norris Gym. 51
Intermediate Swimmers	Intermediate Swimmers
S 10:15-11:00 Norris Gym. 51	S 10:15-11:00 Norris Gym. 51

Swimming (Beginning)—for Women. \$7.50 plus \$1.75 special fee.

For beginners and those who want to increase their skill in strokes and diving. A health examination, for which a fee of 50 cents is charged, will be given at the first class meeting. Sections limited to 30. Repeated spring semester.

Fall Semester	Spring Semester
T 6:00 Norris Gym. 51, Larson	T 6:00 Norris Gym. 51, Larson
T 7:00 Norris Gym. 51, Larson	T 7:00 Norris Gym. 51, Larson
	W 6:00 Norris Gym. 51, Tinker
	W 7:00 Norris Gym. 51, Tinker

Swimming (Intermediate and Advanced)—for Women. \$7.50 plus \$1.75 special fee.

A course for those who know how to swim but wish to learn new strokes or polish up on those they already know. Instruction in diving and water safety included. Sections limited to 30. Repeated spring semester.

Fall Semester	Spring Semester
W 6:00 Norris Gym. 51, Larson	W 6:00 Norris Gym. 58, Larson
W 7:00 Norris Gym. 51, Larson	W 7:00 Norris Gym. 58, Larson

Synchronized Swimming and Water Ballet—for Women. \$7.50 plus \$1.75 special fee.

Instruction in, and adaptation of, strokes and aquatic activities of synchronized and water ballet swimming. Experience in developing group and individual routines. Sections limited to 30. Repeated spring semester.

Fall Semester	Spring Semester
T 6:00 Norris Gym. 58, Starr	T 6:00 Norris Gym. 58, Starr
T 7:00 Norris Gym. 58, Starr	T 7:00 Norris Gym. 58, Starr

Tennis (Beginning)—for Women. \$7.50 plus \$1.75 special fee.

Group and individual instruction. First eleven weeks' instruction given indoors; last six weeks at the university tennis courts. Individual practice for the improvement of strokes; working with tennis robot. Students furnish own tennis rackets and balls.

Spring Semester
T 5:30 Norris Gym. 151, Hauptfuehrer
T 6:30 Norris Gym. 151, Hauptfuehrer

Activities Open to Both Men and Women

Country Dancing I-II. \$7.50 plus \$1.75 special fee.

A recreational course reviving old American dances, the schottische, polka, and the more popular European folk dances. Repeated spring semester. Two sections: I for beginners; II for those who have had some experience.

Fall Semester	Spring Semester
I W 6:00 Norris Gym. 151, Ziemer	I W 6:00 Norris Gym. 151, Ziemer
II W 7:00 Norris Gym. 151, Ziemer	II W 7:00 Norris Gym. 151, Ziemer

Country Dancing III-IV. \$7.50 plus \$1.75 special fee.

III Intermediate: A recreational course which presupposes the level of skill secured by the end of a thorough elementary course. IV Advanced: A recreational course for those who have already acquired considerable repertoire and skill in this area. These courses are repeated in spring semester.

Fall Semester

III W 8:00 Norris Gym. 151, Ziemer

Spring Semester

IV W 8:00 Norris Gym. 151, Ziemer

Badminton Club—for Men and Women. One period, 6 months, \$12.50.

Four periods per week, as scheduled below, will be devoted to playing 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., Cooke Hall gymnasium, Monday and Friday, beginning October 2 and continuing through March with a recess at Christmas. In addition to the regular class periods, those registered may use the badminton courts when available for general intramural play. In charge: Smith, Bowman.

Activities Open Only to Men**Golf—for Men.** \$10 plus \$1 materials fee.

The fundamentals of golf. Motion pictures or stereopticon slides show proper form of stroke. Eight to ten meetings for pictures, lectures, etc., will be held on Monday nights beginning February 12. Lessons or appointments with competent golf instructors in the golf gymnasium will be scheduled for Tuesday, Wednesday, Thursday, or Friday evenings between February 12 and April 9. The last five meetings will be held, weather permitting, at the University Golf Course, where various professionals will assist. The outdoor schedule is adjusted to light. Students will furnish their own clubs.

Spring Semester

M 7:00 Physics Aud., Smith

Squash—for Men. One period, four months. \$7.00.

Class and individual instruction will be given to beginners. Scheduled play will be arranged for the more advanced. Play in addition to the class hour may be arranged with the instructor.

December 1-March 30

F 5:00 Cooke Hall—Stadium Courts, Smith

Swimming—for Men. \$7.50

Class and individual instruction for beginners in all swimming strokes, in diving, in senior lifesaving; preparation for Red Cross examinations. Woolen bathing suits not permitted. Health examination at first meeting. Other sections arranged on demand.

Spring Semester

T 8:05 Cooke Hall, Boyce

Swimming for Boys. \$7.50.

A course for boys 6 to 12 years of age and at least 48 inches tall. The first meeting will be for the purpose of classifying swimmers into the proper groups: beginning, intermediate, advanced. Swimmers are required to bring their own towels.

Spring Semester

Beginners and Intermediate

S 10:00 Cooke Hall, Ostrander

Advanced

S 11:00 Cooke Hall, Boyce

RELIGION

Comparative Religious Thought Today. See page 29.

Readings in Religious Classics. See page 29.

RUSSIAN

See Linguistics, page 26.

SCANDINAVIAN**13-14 Beginning Danish.** 3 credits each semester. \$15.

This course will be taught according to modern language teaching methods with emphasis on the oral approach. Its aim will be to enable the student to understand and take part in a simple conversation and to read newspaper text with ease. Attention will be given to individual requirements. No prerequisite.

Fall Semester

13 Th 6:20 Folwell 12, Aarsleff

Spring Semester

14 Th 6:20 Folwell 12, Aarsleff

15-16 Intermediate Danish. 3 credits each semester. \$15.

This course is designed for students with some previous knowledge of Danish, whether acquired in last year's course in Beginning Danish or elsewhere. Equal attention will be paid to conversation and reading of Danish of today, primarily through recent newspaper and periodical texts. Attention will be given to individual requirements.

Fall Semester
15 Th 8:05 Folwell 12, Aarsleff

Spring Semester
16 Th 8:05 Folwell 12, Aarsleff

17-18 Beginning Finnish. 3 credits each semester. \$15.

Intended for beginners with little or no previous knowledge of Finnish; stresses fundamentals of grammar, correct pronunciation, reading, practice in conversation and simple composition. No prerequisite.

Fall Semester
17 T 6:20 Folwell 102, Halonen

Spring Semester
18 T 6:20 Folwell 102, Halonen

1-2 Beginning Norwegian. 3 credits each semester. \$15.

This course, intended for students who have little or no previous knowledge of Norwegian, stresses spoken Norwegian, but provides in addition the essentials of grammar and some practice in simple composition. No prerequisite.

Fall Semester
1 W 6:20 Folwell 12, Eikaas

Spring Semester
2 W 6:20 Folwell 12, Eikaas

3-4 Conversational Norwegian. 3 credits each semester. \$15.

Designed for students with some theoretical and practical knowledge of Norwegian. Provides a rapid review of grammar and considerable training in practical language usage. Selected readings in Norwegian literature. Prerequisite: Norwegian 1-2.

Fall Semester
3 W 8:05 Folwell 12, Eikaas

Spring Semester
4 W 8:05 Folwell 12, Eikaas

7-8 Beginning Swedish. 3 credits each semester. \$15.

Intended primarily for beginners in Swedish. A minimum of grammar, with emphasis on simple composition and conversation, and some reading of elementary selected prose. No prerequisite.

Fall Semester
7 T 6:20 Folwell 12, Gustafson

Spring Semester
8 T 6:20 Folwell 12, Gustafson

11-12 Swedish Readings. 3 credits each semester. \$15.

A course designed as an introduction to modern Sweden through the medium of reading and discussion of simple Swedish material. Prerequisite: a course in Beginning Swedish or a fair reading knowledge of Swedish.

Fall Semester
11 T 8:05 Folwell 12, Gustafson

Spring Semester
12 T 8:05 Folwell 12, Gustafson

SOCIAL SCIENCE**Social Science 1a-2a-3a. Introduction to Social Science.** 3 credits each unit. \$15.

An integrated study of the factors—historical, political, economic, social, psychological, and cultural—that influence man's behavior. The course is organized around three basic themes: (1) The development of personality, (2) Work as a central aspect of modern life, and (3) The quest for community. Completion of this course applies towards the social science requirement. No prerequisite.

Fall Quarter
1a M 6:20 Ford 103, Naftalin

Winter Quarter
2a (same schedule as fall)

Spring Quarter
3a (same schedule as fall)

SOCIOLOGY**1 Introduction to Sociology.** 3 credits. \$15.

A study of the characteristics of human group life. An analysis of the factors associated with the development of human group life and man's social environment; the structure of the social environment and its influence upon the individual's behavior; the processes involved in social change and the social problems that accompany social change. A survey of the fundamental social institutions, such as the family and the church; the development and decline of social institutions; change in the institutional functions and social disorganization. Repeated spring semester. No prerequisite.

Fall Semester
T 8:05 St. P. Ext. Center 216, Garver
Th 6:20 Ford 8, Caplow

Spring Semester
T 6:20 Ford 8, Caplow

7 Urban Sociology. 3 credits. \$15.

An introduction to the study of city life and city growth. Special emphasis is given to the analysis of urbanism as a culture pattern, and to the use of local and familiar source material drawn from the Twin Cities. A brief research project under supervision is required. Prerequisite: Sociology 1.

Fall Semester
T 6:20 Ford 7, Caplow

14 Sociology of Rural Life. 3 credits. \$15.

Presentation of the factual data necessary to understanding the problems of modern rural social life in the United States. The social processes, stratification, assimilation, conflict, and cooperation as manifested in rural society will be emphasized. Prerequisite: Sociology 1 or equivalent.

Spring Semester

Th 6:20 Ford 104, Marshall

49 Social Problems. 3 credits. \$15.

A survey course in contemporary social problems with special emphasis on personal demoralization and social disorganization.

Spring Semester

Th 6:20 Ford 103, Caplow

T 6:20 St. P. Ext. Center 214, Garver

162 Rural Social Institutions. 3 credits. \$15.

Factors in the rural environment which condition the functioning of rural social institutions, including the family, school, church, local government, health, and welfare. The urban setting will be treated as well from a comparative point of view. Prerequisite: Sociology 1 and 15 credits in social science, child welfare, education, philosophy, or psychology or consent of instructor.

Spring Semester

Th 8:05 Ford 104, Marshall

170 Social Life and Cultural Change. 3 credits. \$15.

A study of recent social trends in the United States with emphasis upon their relationships to problems of human welfare, social control, and social reorganization. The theory of cultural lag and the idea of progress, etc. Prerequisite: Sociology 1 and 15 credits in social science, child welfare, education, philosophy, psychology, or consent of instructor.

Spring Semester

W 6:20 Ford 104, Garver

SOCIAL WORK**70 Introductory Psychiatry. 3 credits. \$15.**

A lecture course, the subject matter of which includes a discussion of mental hygiene, mental mechanisms; psychiatric history taking; review of schools of psychiatry; classification of mental diseases. No prerequisite.

Spring Semester

T 6:20 Ford 109, Hanson

Note—Classes listed below are open to persons employed in social work positions who are approved by an adviser in the School of Social Work. Credit in certain university departments may be granted by application upon successful completion of these courses. Students interested in this should consult their department advisers before registration.

91 Case Method Applied to the Study of Human Problems. 3 credits. \$15.

The general application of the interviewing method for students who plan to work professionally in fields involving human relationships, as Social Work, Public Health Nursing, Speech Pathology, etc. Prerequisite: Social Work 50 or 51 or consent of instructor.

Fall Semester

M 6:20 Ford 106, Saloshin

93 Supervision of Staff. 3 credits. \$15.

Supervision of professional and volunteer staff members in group work agencies and child-caring institutions. Principles of supervision and their application to individual conferences, group conferences, staff meetings, and in-service training. Open to those in supervisory positions in group work agencies and child-caring institutions. Enrollment limited to 25.

Fall Semester

T 9:00-11:00 a.m. Nicholson 107, Pernell

176 Dynamics of Human Behavior Based on Psychoanalytic Theory. 3 credits. \$15.

The application of psychoanalysis in the understanding of abnormal behavior; the lectures deal with normal and abnormal behavior, especially in relation to problems met by the social worker and teacher. Prerequisite: 6 credits in sociology and 6 credits in psychology and consent of an adviser in the School of Social Work. Both sections limited to 25. (See note below.)

Fall SemesterTh 6:20 St. P. Wilder Clinic, 670
Marshall Ave., Lippman**Spring Semester**

T 6:20 N.W. Bank Bldg. 690, Sukov

Note—In order that the students best qualified may be accepted under the limit of 25, registrations for this class will be accepted only provisionally and must be accompanied by a special form filled out by the applicant. Forms may be obtained from any Extension office. Students will be notified of their acceptance or rejection before the opening session. PLEASE REGISTER EARLY.

SPANISH**1-2 Beginning Spanish.** 3 credits each semester. \$15.

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

Fall Semester				Spring Semester			
1	M	6:20	Folwell 227	2	M	6:20	Folwell 227
	T	6:20	Folwell 204		T	6:20	Folwell 204
	T	8:05	St. P. Ext. Center 219, Mousolite		T	8:05	St. P. Ext. Center 219, Mousolite
	Th	6:20	Folwell 227		Th	6:20	Folwell 227

3-4 Intermediate Spanish. 3 credits each semester. \$15.

Review, composition, readings from modern authors. Attention to correspondence and commercial practice if desired. Prerequisite: Spanish 1-2 or 2 years of preparatory Spanish.

Fall Semester				Spring Semester			
3	T	6:20	St. P. Ext. Center 219, Buss	4	T	6:20	St. P. Ext. Center 219, Buss
	W	6:20	Folwell 201		W	6:20	Folwell 201

5-6 Written and Spoken Spanish. 3 credits each semester. \$15.

Practice in speaking, review grammar and composition. Prerequisite: 3-4.

Fall Semester				Spring Semester			
5	W	6:20	St. P. Ext. Center 219, Mousolite	6	W	6:20	St. P. Ext. Center 217, Mousolite

7-8 Latin-American Culture. 3 credits each semester. \$15.

This course offers a panoramic view of Latin-American culture. It attempts to interpret the land, the people, and their history; the political, social, and economic organization; the cultural and literary traditions in such a way as to give the North American a unified picture of the twenty countries of Latin America. Lectures and readings in English; Spanish not necessary. No prerequisite.

Fall Semester				Spring Semester			
7	Th	6:20	Folwell 201, Cuneo	8	Th	6:20	Folwell 201, Cuneo

53-54 Spanish Composition and Conversation. 3 credits each semester. \$15.

Practical composition, including correspondence and conversation. Prerequisite: Spanish 5-6 or equivalent.

Fall Semester				Spring Semester			
53	T	6:20	Folwell 213, Mills	54	T	6:20	Folwell 213, Mills

65-66 Survey of the Literature of Spain. 3 credits each semester. \$15.

Readings from selected authors, past and current. Class is conducted in English. Prerequisite: Spanish 3-4.

Fall Semester				Spring Semester			
65	Th	6:20	Folwell 213, Irving	66	Th	6:20	Folwell 213, Irving

SPEECH**1-2†-3 Fundamentals of Speech.** 3 credits each semester. \$15 plus \$1 laboratory fee.

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. No prerequisite.

Fall Semester				Spring Semester			
1	M	8:05	Folwell 308, Fletcher	1	M	8:05	Folwell 308, Fletcher
	W	6:20	St. P. Ext. Center 216, Bystrom		W	6:20	St. P. Ext. Center 216, Bystrom
2	M	6:20	Folwell 305, Paulson	2	M	6:20	Folwell 305, Paulson
	W	6:20	St. P. Ext. Center 216, Bystrom		W	6:20	St. P. Ext. Center 216, Bystrom
3	M	6:20	Folwell 305, Paulson	3	M	6:20	Folwell 305, Paulson
	W	6:20	St. P. Ext. Center 216, Bystrom		W	6:20	St. P. Ext. Center 216, Bystrom

Communication 1-2-3. See page 17.

Beginning Acting (Speech 32). See Theater, page 40.

Advanced Acting (Speech 76). See Theater, page 40.

Technical Discussions. See page 19.

Efficient Listening. See page 28.

† See Information, page 5.

Beginning Practical Speech Making. 3 Extension credits. \$15 plus \$1 laboratory fee.

A beginning course for business and professional people who are desirous of learning to speak extemporaneously so that their ideas may be presented in an organized way and 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 in Advanced Practical Speech Making. Voice recordings will be made. No prerequisite. (Sections limited to 25 each.)

Fall Semester

M 6:20 Folwell 6, Fulton
T 6:20 Folwell 8, Nichols
W 6:20 Folwell 6, Fulton
Th 6:20 St. P. Ext. Center 219, Woods

Spring Semester

M 6:20 Folwell 6, Fulton
T 6:20 Folwell 8, Nichols
W 6:20 Folwell 6, Woods
Th 6:20 St. P. Ext. Center 219, Woods

Advanced Practical Speech Making. 3 Extension credits. \$15 plus \$1 laboratory fee.

An advanced course for business and professional people who are desirous of developing skill in extemporaneous speaking dealing with life problems and public questions; individual attention to special problems. Each student speaks before the class each meeting. Voice recordings will be made. Open only to students who have completed Beginning Practical Speech Making, except by special permission of instructor. (Sections limited to 25 each.)

Fall Semester

W 6:20 Folwell 8, Sandquist

Spring Semester

W 6:20 Folwell 8, Sandquist

Efficient Listening. See page 28.**Vocabulary Building I.** 1½ Extension credits. \$7.50 plus \$1 materials fee.

A practical course designed to increase students' speaking and reading vocabularies. Mimeographed matter, in lieu of text, issued each meeting. Home study suggested but not required. Not a recitation class. Meets weekly for one hour. No prerequisite.

Fall Semester

T 6:20 St. P. Ext. Center 217, Dreher
T 8:05 Folwell 308, Dreher

Spring Semester

T 6:20 St. P. Ext. Center 217, Dreher
T 8:05 Folwell 113, Dreher

Vocabulary Building II. 1½ Extension credits. \$7.50 plus \$1 materials fee.

A more advanced and detailed study of words. Includes composition, exercises, reports, tests; not a recitation class; home study recommended. Meets weekly for one hour. No prerequisite.

THEATER**Beginning Acting.** 3 credits (see below). \$15 plus \$1 laboratory fee.

A course designed both for the amateur actor who needs to gain experience and background for pursuing future theatrical work and for the playgoer who wishes through a practical working knowledge of acting techniques to enhance his appreciation and enjoyment as a spectator of theatrical productions. Creative and technical approaches; the art of pantomime; principles of stage technique and voice; exercises and projects in characterization. Students are eligible for try-out in acting and constructive phases of University Theatre activities. No prerequisite. Qualified students may receive credit in Speech 32; consult instructor at opening class.

Fall Semester

Th 6:20 Nicholson 3rd Floor, Engar

Advanced Acting. 3 Extension credits or 3 credits in Speech 78 (see below). \$15 plus \$1 laboratory fee.

A course designed for those who have had some training or experience in acting and wish to improve their skills. Emphasis is upon the study of characterization, various styles of acting, and the principles of stage technique. Exercises and projects in the presentation of scenes from great plays. Qualified students may receive credit in Speech 78; consult instructor at opening class.

Spring Semester

Th 6:20 Nicholson 3rd Floor, Graham

Radio Drama. See page 34.**Radio Writing.** See page 34.**55-56 Shakespeare.** See page 20.**ZOOLOGY****1-2† General Zoology.** 5 credits each semester. \$25 plus \$5 laboratory fee.

Structure, physiology, embryology, classification, genetics, and evolution of animals. Equivalent to Zoology 1-2-3 in day class. Three hours each night, including laboratory work. Minimum registration of 20 students required. No prerequisite.

Fall Semester

1 MW 6:30 Zoology 211

Spring Semester

2 MW 6:30 Zoology 211

† See Information, page 5.

BUSINESS CLASSES

ACCOUNTING

The Accounting Process, An Introduction. 3 Extension credits. \$15.

A survey course for those in business and professional life who wish to understand the accounting treatment and terminology used in financial statements, stockholders reports, income tax determination, and modern accounting control methods without emphasis on technical bookkeeping procedures. How the problems arise, the various procedures used, and methods of presentation are discussed. Cash and accrual accounting, depreciation methods, inventory valuations, "fund" or working capital statements, "goodwill," introduction of standards, budgeting and variation analysis in operating statements. Prerequisite: an elementary understanding of bookkeeping or consent of instructor.

Fall Semester

M 6:20 McKnight Bldg. 250, Reighard

Econ. 24-25-26 Principles of Accounting. 3 credits each quarter. \$15 each unit.

Principles of accounting based on text and requiring preparation of problems and sets outside the class period—the full first year university course in accounting. Classes meet for approximately 2½ hours. No prerequisite.

Fall Quarter

24 M 6:20-9:00 Vincent 301, Sevenich
M 6:20-9:00 St. P. Ext. Center 218,
Montgomery

Winter Quarter

25 (same schedule as fall)

Spring Quarter

26 (same schedule as fall)

Econ. 24-25 Principles of Accounting. 3 credits each semester. \$15.

Principles of accounting—the first two units of the university course in accounting listed above. These sections are designed for students who prefer shorter class sessions and more preparation time for each class. Econ. 26 will be offered in the fall of 1951.

Fall Semester

24 T 6:20 Vincent 301
W 6:45 McKnight Bldg. 250
Th 6:20 St. P. Ext. Center 218,
Montgomery

Spring Semester

25 T 6:20 Vincent 301
W 6:45 McKnight Bldg. 250
Th 6:20 St. P. Ext. Center 218,
Montgomery

Econ. 24-25 Principles of Accounting (Combined). 6 credits. \$15 each unit.

This course offers both Econ. 24 and 25 units complete in one semester, eight weeks for each, two classes per week. Classes meet for approximately 2½ hours. Registration and fees accepted for combined course, or for single units provided Econ. 24 has preceded Econ. 25.

Spring Semester

MF 6:20 Vincent 309, Lund
MF 6:20 St. P. Ext. Center 216, Creviere

B.A. 65 Analysis of Financial Statements (formerly B.A. 139). 3 credits. \$15.

A course in the use of financial statements by creditors, investors and executives. The material is approached from the viewpoint of the reader of statements, and is not concerned with accounting technicalities. Reports of commercial, industrial, public utility and railroad companies are used as basic material for the course. Prerequisite: Econ. 23 or 26 or consent of instructor.

Spring Semester

W 6:20 Vincent 306, Nelson

B.A. 66 Cost Accounting Survey (formerly B.A. 130). 3 credits. \$15.

A general survey of cost accounting from the point of view of the executive who must use cost information in the conduct of his business. This course may substitute for B.A. 152 Cost Accounting as prerequisite for B.A. 153. Prerequisite: Econ. 23.

Fall Semester

T 6:20 Vincent 309

B.A. 150-151† Intermediate Accounting. 3 credits each semester. \$15.

Second year accounting for students intending to specialize in accounting. Standard text and problems designed to build on principles of the first year course, developing accepted accounting practices in valuation and amortization procedures, determination of periodic income and stockholders' interest. Prerequisite: Econ. 23 or 26 or equivalent with consent of instructor.

Fall Semester

150 M 6:20 Vincent 307, Heilman
W 6:20 St. P. Ext. Center 214,
Guthman
W 6:20 Vincent 301, Lund

Spring Semester

151 M 6:20 Vincent 307, Heilman
W 6:20 St. P. Ext. Center 214,
Guthman
W 6:20 Vincent 301, Lund

† See Information, page 5.

B.A. 152-153† Cost Accounting. 3 credits each semester. \$15.

Cost accounting with text, laboratory set and problems, requiring outside preparation, covering job order and process cost procedures and theory. With special permission students may substitute B.A. 152 for B.A. 130 to meet core group requirements. Prerequisite: Econ. 23 or equivalent with instructor's consent.

Fall Semester			Spring Semester		
152	T 6:20	Vincent 307, Ostlund	153	T 6:20	Vincent 307, Ostlund
	W 8:05	St. P. Ext. Center 214, Tuttle		W 8:05	St. P. Ext. Center 218, Tuttle

Constructive Accounting. 3 Extension credits. \$15.

The design and installation of a modern accounting system; the makeup of various forms for use in the system—purchase orders, receiving slips, invoices, requisitions, shop tickets, etc.; design and ruling of books of original entry; ledgers of various kinds. Prerequisite: see instructor.

Fall Semester
T 6:20 St. P. Ext. Center 218, Tuttle

Accounting Systems. 3 Extension credits. \$15.

Classification of industry according to types of accounting problems; special features of each, constructive, operative, interpretative features. Case method used. Prerequisite: see instructor.

Spring Semester
T 6:20 St. P. Ext. Center 218, Tuttle

B.A. 133 Standard Cost Accounting and Distribution Costs. 3 credits. \$15.

Methods of standard costs; meaning of standards; setting of standards for materials, labor and overhead; analysis of and accounting for variations; development and application of standards to distribution as well as to production activities. Prerequisite: B.A. 66 or 130 or B.A. 153 or consent of instructor.

Fall Semester		Spring Semester	
T 8:05	St. P. Ext. Center 218, Tuttle	W 6:20	Vincent 307

B.A. 118 Auditing Procedure. 3 credits. \$15.

An introduction to auditing procedure with the preparation of a coordinated set of working papers and related statements, from ledgers, journals, original documents. A course prerequisite to B.A. 135, Auditing and Public Accounting. Prerequisite: B.A. 151 or 65 or 139.

Fall Semester
Th 6:20 Vincent 306, Reighard

B.A. 135 Auditing and Public Accounting. 3 credits. \$15.

Preparation of audit reports from working papers; development of accepted auditing procedures under S.E.C. and A.I.A. releases; consideration of C.P.A. auditing problems and special case studies. Prerequisite: B.A. 118.

Spring Semester
Th 6:20 Vincent 306, Reighard

B.A. 134 Income Tax Accounting. 4 credits plus 2 Extension credits (see below). \$30.

Students must register for and complete the full course to receive the four university credits applicable to this course. Application of income tax laws to and preparation of both state and federal returns for individuals, partnerships, and corporations. Class meets once a week for three hours and twenty minutes. Prerequisite: B.A. 151 or consent of instructor.

Fall Semester
M 6:20 St. P. Ext. Center 216, Daly
W 6:20 Vincent 306, Nelson

B.A. 136 Controllership Function and Procedures. 3 credits. \$15.

Organization of and the administrative problems of the accounting system operation from a procedural point of view to insure integrity, accuracy, accountability and control in different lines of business activity. Prerequisite: Econ. 23 or 26.

Spring Semester
M 6:20 Vincent 306, Wheeler

B.A. 154 Budgetary Control. 3 credits. \$15.

The fundamentals of establishing and operating a budget. Budgetary control and the relation to break-even analysis. Prerequisite: B.A. 66 or 130 or 152 or consent of instructor.

Fall Semester
M 8:05 Vincent 205, Wheeler

B.A. 157 C.P.A. Examination Problems. 4 credits. \$20.

A problem solving course for the student or accountant who desires to improve his problem-solving ability or to review his accounting. Problems are taken from various uniform (American Institute of Accountants) examinations. Class meets for approximately 2¼ hours. Prerequisite: B.A. 151 and 153 or their equivalent in experience.

Fall Semester
M 6:20 Vincent 306, Nelson

† See Information, page 5.

ADVERTISING

B.A. 188 Advertising (formerly B.A. 88). 3 credits. \$15.

Covers two important phases of advertising: the place of advertising in business and advertising procedure. Attention to planning an advertising campaign, including market research, appropriations, choice of media, scheduling, preparation of copy, and layout. Prerequisite: Economics 6-7, Psychology 1-2, 56, and B.A. 77, Marketing.

Spring Semester

T 6:20 Vincent 205, Lewis

The Creation of Advertising. 3 Extension credits. \$15.

A somewhat advanced course in planning, writing, and designing advertisements. Depending upon enrolment, emphasis will be placed on retail or agency-type problems—but both will be covered. Course to be taught by professional writers and artists, and assignments will involve practical problems in advertising creation of all kinds. Prerequisite: Jour. 18 or Advertising Practice or actual advertising experience with consent of instructor

Spring Semester

W 8:05 Murphy 302, Seehafer and others

18 Principles of Advertising. See page 25.

86 Advertising Copy and Layout. See Journalism, page 25.

87 Radio Advertising. See Journalism, page 26.

BUSINESS ENGLISH

1 Business English. 3 Extension credits. \$15.

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 type; application of good grammar and correct forms in all business writing. Repeated spring semester. No prerequisite.

Fall Semester

T 6:20 St. P. Ext. Center 206, Lippert

T 8:05 Vincent 205, Haga

W 6:20 Vincent 205, Haga

Spring Semester

T 6:20 St. P. Ext. Center 206, Lippert

W 6:20 Vincent 205, Haga

2 Business Correspondence. 3 Extension credits. \$15.

A more advanced class with less emphasis on grammar and mechanics. Practical adaptation of successful letter writing to specialized correspondence under such headings as: executive, personnel, and financial problems. Each student will work out an individual communications project related to his own most imperative business needs. No prerequisite, but Business English or its equivalent is, for practical reasons, strongly recommended.

Spring Semester

T 8:05 St. P. Ext. Center 206, Lippert

W 8:05 Vincent 205, Haga

9 Technical Discussions. See page 19.

BUSINESS LAW

B.A. 51-52-53, 56 Business Law. 3 credits each semester. \$15 (51 and either 52 or 53 must be completed before credit for degree or senior certificate is granted.)

Comprehensive course in the fundamental principles of law for the business and professional man. B.A. 51: contracts—formation, operation, transfer, discharge. B.A. 52: business associations—nature, creation and terms of the relation, rights, and liabilities of the parties when doing business through agents, partnerships, and corporations. B.A. 53: law of sales of goods under the Uniform Sales Act and law of commercial paper under the Uniform Negotiable Instruments Law. B.A. 56: 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. Prerequisite: B.A. 51 must precede 52 or 53 unless the consent of the instructor is obtained for a different sequence.

Fall Semester

51 M 8:05 St. P. Ext. Center 206, Ackman

W 6:20 Vincent 207, McClendon

52 M 6:20 St. P. Ext. Center 214, Ackman

W 8:05 Vincent 207, McClendon

53 T 6:20 Vincent 113, McClendon

Spring Semester

51 M 6:20 St. P. Ext. Center 206, Ackman

W 8:05 Vincent 1, McClendon

52 M 8:05 St. P. Ext. Center 206, Ackman

W 6:20 Vincent 1, McClendon

56 T 8:05 St. P. Ext. Center 216, Leonard

Th 6:20 Vincent 1, Maloney

Common Legal Problems. 3 Extension credits. \$15 plus \$1 materials fee.

A course in everyday legal principles for the layman who wishes more intelligently and efficiently to fulfill his place as a citizen; not a "business law" course. Any individual, whether married or single, housewife or businessman, is bound to come up against many legal problems in varied fields during a lifetime. In many cases these problems might never arise or might be considerably eased if the persons involved could anticipate them and know in advance what are the basic rights and liabilities and what steps should be taken to enforce or guard them, whom to consult, etc. This course will examine those everyday transactions which of necessity involve certain fundamental legal aspects; property rentals, leases, purchases and sales, building contracts and liens, mortgages and loans; rights and liabilities of master and servant, husband and wife, agents or partners; liability for accidents, negligence, trespass, etc.; handling of wills, estates, tax returns, etc.; and many similar common operations or relationships.

Fall Semester

W 6:20 Ford 8, Thorfinnson
W 6:20 St. P. Ext. Center 217, Riley

Spring Semester

W 6:20 Ford 8, Thorfinnson
W 6:20 St. P. Ext. Center 219, Riley

ECONOMICS**Econ. 5 Elements of Statistics.** 3 credits. \$15.

The principles of statistical methods applied to business; collection, tabulation, and interpretation of statistical data; averages, ratios, errors, index numbers, graphs, and charts. No prerequisite.

Fall Semester

W 6:20 Vincent 113
Th 8:05 St. P. Ext. Center 217, Gaasedelen

Spring Semester

W 6:20 Vincent 6
M 6:20 St. P. Ext. Center 214, Gaasedelen

Econ. 6-7† Principles of Economics. 3 credits each semester. \$15.

Fundamental principles underlying the economic activities and national income; 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 prerequisite.

Fall Semester

6 M 6:20 Vincent 205
T 8:05 Vincent 1
W 6:20 Vincent 6
W 6:20 St. P. Ext. Center 206
Th 8:05 Vincent 207
7 T 8:05 Vincent 207

Spring Semester

6 T 8:05 Vincent 207
7 M 6:20 Vincent 205
T 6:20 Vincent 207
W 6:20 Vincent 207
W 6:20 St. P. Ext. Center 206
Th 8:05 Vincent 207

Econ. 80-81† Intermediate Economic Analysis. 3 credits each semester. \$15.

A study of some of the more important theoretical problems of economics; competitive and monopoly prices; equilibrium prices and costs; theories of valuation of producers' goods; capital earnings and interest rates; profits. Prerequisite: Economics 6-7.

Fall Semester

80 Th 6:20 Vincent 205, Waite

Spring Semester

81 Th 6:20 Vincent 205, Waite

B.A. 74 Business Statistics (formerly B.A. 112). 3 credits. \$15.

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. Prerequisite: Econ. 5, or 14, or equivalent.

Spring Semester

Th 6:20 Vincent 207

Econ. 85 Government Regulation of Business (formerly Econ. 175). 3 credits. \$15.

A general course on the economic aspects of legislation affecting the pricing process and the distribution of the national income; origins of limitations on free competition; regulation of public utilities, trusts and combinations, and "unfair competitive practices"; positive assistance to industrial groups. Prerequisite: Economics 7.

Fall Semester

Th 8:05 Vincent 2, Boddy

FINANCE**Econ. 3 Elements of Money and Banking.** 3 credits. \$15.

The nature and functions of money and credit; a study of commercial banking and the Federal Reserve System—their functions in private finance, ordinary governmental finance, and war finance. Machinery designed to control alternate periods of inflation and deflation; other types of financial institutions and security exchanges; changes in form and functions resulting from legislation or revised business practices. No prerequisite.

Fall Semester

M 6:20 Vincent 113, Stehman
T 8:05 St. P. Ext. Center 214

Spring Semester

W 8:05 Vincent 113

† See Information, page 5.

B.A. 58 Elements of Public Finance. 3 credits. \$15.

Public expenditures, revenues, debts, fiscal policy and financial administration. Special attention is given to tax principles, practices, burdens, and coordination of national, state, and local finance. Prerequisite: Economics 6-7.

Spring Semester

T 6:20 Vincent 2

Econ. 64 Economics of Money and Banking (formerly Econ. 142). 3 credits. \$15.

The problems of a central bank and the theory of the value of money. Includes control of reserves, providing a scientific currency, regulation of credit, fluctuations of the general price level—their causes and possible reduction. Prerequisite: Economics 3 and 6-7.

Fall Semester

T 6:20 Vincent 205, Stovel

Econ. 75 Corporation Finance (formerly Econ. 155). 3 credits. \$15.

Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporations. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations. Prerequisite: Econ. 3 and 6-7.

Spring Semester

M 6:20 Vincent 2, Stehman

Econ. 149 Business Cycles. 3 credits. \$15.

Analysis of factors involved in business fluctuations. Comparison of theories of the cause of prosperity and depression. Introduction to the statistical data and methods of business forecasting. Prerequisite: Econ. 141 or 64 or 142 or consent of instructor.

Spring Semester

T 6:20 Vincent 113, Stovel

Econ. 126 Economic Problems of Latin-America. 3 credits. \$15.

The development of economic resources; influence of foreign economies; organization for production; state of the industrial arts; domestic markets and transportation; government finance; present tendencies in respect to economic progress, economic security, and social control. Prerequisite: Economics 6-7.

Fall Semester

T 8:05 Vincent 113, Albertal

B.A. 177 Foreign Trade. 3 credits. \$15.

Theories of international trade; character of United States foreign trade and the world market. Commercial organization and foreign trade financing, foreign shipments—export and import. Transportation and shipping problems; governmental regulation; and individual markets. Prerequisite: Economics 6-7.

Spring Semester

T 8:05 Vincent 113, Albertal

Fundamentals of Investment Banking I-II. 3 Extension credits each semester. \$15.

Classroom instruction supplemented by special lectures by men of experience in investment banking, commercial banking and other related fields. Course covers nature of various kinds of securities; statistical and investment analysis of securities; vocabulary and practices of the securities business; investment practices of various investor groups. No prerequisite.

Fall Semester

I M 6:20 Vincent 6, Power

Spring Semester

II M 6:20 Vincent 6, Power

INDUSTRIAL MANAGEMENT**B.A. 89 Production Management. 3 credits. \$15.**

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. (Same as Mech. Eng. 171.) Included in core group requirement for all candidates for a degree in business. Repeated spring semester. Prerequisite: Economics 6-7.

Fall Semester

M 6:20 Vincent 4, Mitton

Spring Semester

M 6:20 Vincent 4, Mitton

B.A. 170C Materials Control and Utilization. 3 credits. \$15.

A course of interest to those engaged in the general field of production. Considered from the point of view of material as a cost of production—what management can do to effect economical utilization of materials; elimination of waste; storage and movement of materials; purchase contract clauses that affect the ultimate delivered cost of materials; relation of material control to production control; factors other than basic market prices that affect material costs. Repeated spring semester. Prerequisite: B.A. 89.

Fall Semester

T 8:05 Vincent 4, Peterson

Spring Semester

T 8:05 Vincent 4, Peterson

INDUSTRIAL RELATIONS

See also Industrial Relations Classes, page 51 and Industrial Relations Certificate, page 9.

Econ. 73 Labor Problems and Trade Unionism (formerly Econ. 161). 3 credits. \$15.

Employment; hours; wages; extent and stronghold of unionism; open and closed shop; collective bargaining; industrial unrest; government regulation of labor disputes. Special emphasis on the current proposals for industrial recovery and the re-employment of labor. Prerequisite: Economics 6-7.

Fall Semester

T 6:20 St. P. Ext. Center 214, Fox
W 6:20 Vincent 1, Heneman

Econ. 164 Labor Legislation and Social Insurance. 3 credits. \$15.

A course dealing with the economic aspects of labor legislation, including minimum wage laws; hours legislation; factory acts; accident, health, old age, and unemployment compensation; mothers' pensions. Prerequisite: Economics 73 or 161.

Spring Semester

M 8:05 Vincent 205, Cheit

B.A. 167 Introduction to Industrial Relations. 3 credits. \$15.

Evaluation of managerial policies and devices for the control of personnel; determination of labor needs; methods of dealing with workers; selective devices; training and safety programs; compensation; collective bargaining; governmental personnel programs. Prerequisite: Economics 73 or 161.

Spring Semester

M 6:20 St. P. Ext. Center 204, Fox
W 6:20 Vincent 113, Heneman

Psy. 122-123† Vocational and Personnel Psychology. 3 credits each semester. \$15 plus \$1 laboratory fee.

Deals with selecting, counseling, training, and maintaining an efficient labor force in industry. Theory and practice of giving, interpreting, and evaluating psychological tests and of interviewing; constructing and using rating scales; training, maintaining, and promoting employees. There will also be actual practice in the use of psychological tests. Not open for credit to those who have taken Psychology 160-161 for credit. Prerequisite: consent of instructor.

Fall Semester

122 M 6:20 Psychology 211, Longstaff

Spring Semester

123 M 6:20 Psychology 211, Longstaff

Psy. 125-126 Psychology of Individual Differences. 3 credits each semester. \$15.

Asks how and why people differ. Deals with factors such as age, sex, race, heredity, and environment and how these are related to differences in ability and temperament. These differences are important in personnel work, vocational counseling, and in industrial relations. May be used for elective credit toward a Certificate in Industrial Relations. Prerequisite: Psychology 1-2.

Fall Semester

125 T 6:20 Psychology 115, Jenkins

Spring Semester

126 T 6:20 Psychology 115, Jenkins

Elements of Supervision. See page 51.

Wage and Salary Administration. See page 52.

Survey of Current Problems in Industrial Relations. See page 51.

Advanced Supervision. See page 51.

Elements of Union Administration. See page 51.

INDUSTRIAL ENGINEERING

See Industrial Engineering Classes, page 63.

INSURANCE

Econ. 50 Insurance Principles. 3 credits. \$15.

Deals with the nature and measurement of risk and with the development and uses of personal, property, and liability insurance. Forms of protection; policy contracts; social insurance and government regulation. Special emphasis on property insurance. Prerequisite: Economics 6-7. Repeated spring semester.

Fall Semester

T 8:05 Vincent 6, Graves

Spring Semester

T 8:05 Vincent 6, Graves

† See Information, page 5.

College of Life Underwriters Curriculum. In cooperation with the Minneapolis and St. Paul chapters of the American College of Life Underwriters (C.L.U.).

This year the Extension Division is offering Part A, Life Insurance Fundamentals section of the C.L.U. educational program (see listing below). Many of the regularly listed courses elsewhere in this bulletin may be of assistance to those who are preparing for examination on other parts of the curriculum. Full information on the American College of Life Underwriters study program may be obtained from the annual announcement of the College which is available at Extension offices or through the Minneapolis or St. Paul chapters of the Chartered Life Underwriters.

Minneapolis—M. J. Nolan, 500 First National Soo Line Building.
St. Paul—W. F. Stone, 1300 Pioneer Building.

C.L.U. Part A, Life Insurance Fundamentals I-II. 3 Extension credits each semester. \$15.

This course is designed as preparation for the annual C.L.U. examination in Part A, Life Insurance Fundamentals, as conducted by the American College of Life Underwriters. The subject matter will cover such topics as: basic life insurance principles, the life insurance contract, functions of life insurance, mortality tables, premiums, selection of risk, types of insurance companies and associations, etc.

For information concerning the C.L.U. educational program and its requirements see notice above.

Fall Semester

I M 4:00 N. W. Bank Bldg. 690, Kennon
M 4:00 St. P. Ext. Center 219, Wheeler

Spring Semester

II M 4:00 N. W. Bank Bldg. 690, Kennon
M 4:00 St. P. Ext. Center 219, Wheeler

Property and Casualty Insurance Curriculum. In cooperation with the American Institute for Property and Liability Underwriters, Inc.

The University of Minnesota cooperates with the American Institute for Property and Liability Underwriters, Inc. by offering an educational program that provides the basic courses needed by those who wish to take the institute's examinations for the Chartered Property Casualty Underwriter (C.P.C.U.) award. Complete details of this program of training are printed in the institute's annual announcements, copies of which may be obtained from the General Extension Division of the University of Minnesota. Following is an outline of the program, with a list of the appropriate courses offered by the General Extension Division.

Parts I-II Insurance Principles and Practices

See C.P.C.U. course listed below

Part III General Education

See C.P.C.U. course listed below

Economics
Government
Social Legislation
English

Econ. 6-7 Principles of Economics
Pol.Sci. 1-2 American Government
Econ. 164 Labor Legislation and Social Insurance
Grammar Review or Business English

Part IV Law

B.A. 51-52-53,56 Business Law (does not include Law of Negligence)

Part V Accounting and Finance

Accounting
Finance
Business Organization

Econ. 24-25-26 Principles of Accounting
Econ. 3 Elements of Money and Banking
B.A. 89 Production Management

C.P.C.U. Part I. Insurance Principles and Practices, A-B. 3 Extension credits each semester. \$15.

An intensive course in the basic principles of property and casualty insurance, designed as preparation for examination I for the Chartered Property Casualty Underwriter (C.P.C.U.) award offered by the American Institute for Property and Casualty Underwriters, Inc. The course will be conducted by a panel of instructors selected from practicing insurance men, coordinated and supervised by the University School of Business Administration. A course in Part II will be offered in 1951-52. Prerequisite: At least three years general experience or the equivalent in formal study and acceptance of special registration application; consult any Extension office.

Fall Semester

A M 6:20 Nicholson 213, coordinator:
Graves

Spring Semester

B M 6:20 Nicholson 213, coordinator:
Graves

C.P.C.U. Part III. General Education, A-B. 3 Extension credits each semester. \$15.

This course is designed as preparation for examination III for the Chartered Property Casualty Underwriter (C.P.C.U.) award. The subject matter covers Economics, Government and Social Legislation. Prerequisite: A basic collegiate course in both Economics and Government and acceptance of special registration application; consult any Extension office.

Fall Semester

A M 8:05 Vincent 6, Smith

Spring Semester

B M 8:05 Vincent 6, Smith

MARKETING AND MERCHANDISING

Basic Salesmanship. 3 Extension credits. \$15.

Principles underlying salesmanship—aspects of human relations, buying motives, pre-approach, approach, the interview, meeting objections, voice requirements, closing the sale. Repeated spring semester. No prerequisite.

Fall Semester

M 6:20 Ford 8, Stearns
Th 6:20 St. P. Ext. Center 206, Stearns

Spring Semester

M 6:20 Ford 8, Stearns

Advanced Salesmanship. 3 Extension credits. \$15.

Self-management, organizing and planning territorial work, sales routine and office correspondence, finding prospects and getting the interview, individual sales demonstrations, development of potential in the territory, use of advertising. Limited to 35. Prerequisite: Basic Salesmanship or consent of instructor.

Spring Semester

Th 6:20 Ford 8, Stearns

B.A. 113 Sales Management (formerly B.A. 68). 3 credits. \$15.

Organization and direction of sales methods and men from the sales manager's point of view; determination of selling policy; product and market research; sales planning and research; selection of distribution methods; sales campaigns and quotas; incentives and compensation for salesman; training in salesmanship; supervision and control. Case studies and discussions. Prerequisite: B.A. 77.

Fall Semester

T 6:20 Vincent 207, Lewis

B.A. 114 Retail Store Management (formerly B.A. 69). 3 credits. \$15.

Organization; location, layout, and equipment; buying and sales budgets and sales planning; sales promotion; interior and window display; stock and expense control; finance and general policy; credits and collections; personnel; store operation and services. Case studies, problems, and discussions. Prerequisite: B.A. 77.

Spring Semester

W 6:20 Vincent 2, Canoyer

B.A. 76 Credits and Collections. 3 credits. \$15.

Study of the nature and types of credit and of credit instruments and agencies; qualifications and work of the credit manager; valuation and use of financial statements and credit reports; collection methods and correspondence; bankruptcy and adjustments; credit limits and control. Prerequisite: B.A. 77.

Fall Semester

Th 6:20 Vincent 113, Miller

B.A. 77 Survey in Marketing. 3 credits. \$15.

Survey course including descriptive analysis of (1) marketing institutions and their control; (2) market areas; (3) marketing costs; (4) the operation of supply and demand in marketing. Prerequisite: Economics 6-7.

Fall Semester

W 6:20 Vincent 4

B.A. 188 Advertising. See page 43.

For other advertising courses see pages 25 and 26.

Commodity Purchasing II—"How to Buy." 3 Extension credits. \$15 plus \$2 materials fee.

The principles and techniques of buying specific common commodities such as rubber, steel, glass, etc. This course sponsored jointly by the Twin City Association of Purchasing Agents and the Extension Division, is intended primarily for active buyers.

Visual aids (generally 30-minute sound films) are used to give the student the background of how the commodity is produced. A "guest expert" active and experienced in the purchase of the commodity and drawn from the ranks of the T.C.A.P.A. provides the lecture for each meeting, followed by a discussion period. Material provided by the National Association of Purchasing Agents is also utilized.

Fall Semester

T 6:20-8:30 Murphy Auditorium, coordinator: Peterson

G.C. 49A-B-C Retailing and Selling. 5 credits each quarter (classwork, 3 credits; work experience, 2 credits). \$15 plus \$1 materials fee.

Open to full-time store employees who can arrange to attend Monday morning lectures. Instruction in the field of retailing with salesmanship receiving the greatest emphasis. Other phases of merchandising covered will enable one to perform with greater understanding at various capacities in a retail business. The student may follow specific interests through directed studies. Assigned laboratory meetings include demonstrations, reports,

group discussions, and observation trips into a variety of distributive businesses. Speakers from local stores, related businesses, and consumer groups provide current information and business contacts of importance. The three units should be taken in sequence but registration in any single unit may be approved by instructor. Prerequisite for all units: permission of instructor.

49A—Salesmanship; personnel policies; store system; consumer credit; stock control; distributive vocations.

49B—Historical background of retailing; types of retail outlets; store organization; non-selling activities in merchandising.

49C—Selling through promotion; display, advertising, store services; trends in retailing; merchandise research, labeling, standardization; consumer education; coordination of retail store activities.

Fall Quarter
 A Lect. M 9:00-10:00 a.m. Nicholson 122,
 Determan
 Lab. T 6:30-10:00 p.m. Nicholson 122,
 Determan

Winter Quarter
 B (same schedule as fall quarter)
Spring Quarter
 C (same schedule as fall quarter)

REAL ESTATE

The University of Minnesota cooperates with the National Association of Real Estate Boards and with the Real Estate Boards of St. Paul and Minneapolis in a program of educational training leading toward competence in the professional aspects of real estate practice. Instructing staff for each course will be made up of a number of practicing realtors in the Twin Cities. Coordinator for the Real Estate Boards: Bernard G. Rice, 612 National Building, Minneapolis.

Fundamentals of Real Estate Practice. 3 Extension credits. \$15.

Economic functions of the real estate business; fundamental practices of the real estate office and other realtors; real estate valuations; methods of appraising; ethics of real estate practice. A business course in real estate. Prerequisite: consult instructor.

Fall Semester
 M 6:20 Vincent 2, Rice, coordinator

Real Estate Sales Brokerage. 3 Extension credits. \$15.

A study of the basic principles and practices involved in the conduct of real estate sales from beginning to end: evaluation, listing, advertising, contracts and leases, financing and taxes, property showing, selling techniques, code of ethics. No prerequisite.

Fall Semester
 W 6:20 Vincent 2, Rice, coordinator

Real Estate Appraisal. 3 Extension credits. \$15.

Detailed consideration of principles and practices involved in appraising various types of real property for various purposes. Factors determining valuations; making and reporting appraisals. Appraisal procedures in various legal actions. Prerequisite: Fundamentals course.

Spring Semester
 M 6:20 Vincent 113, Newcombe, coordinator

Real Estate Law (B.A. 56 Business Law). 3 credits. \$15.

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. Prerequisite for credit in School of Business Administration: B.A. 53 Business Law.

Spring Semester
 T 8:05 St. P. Ext. Center 216, Leonard
 Th 6:20 Vincent 1, Maloney

Planning Your Modern Home. See page 24.

Building Material Estimating. See page 56.

TEXTILES

Textiles. 3 General College or Extension credits. \$15 plus \$2 materials fee.

A class for consumers and for those making or selling clothing and home furnishings. Woven and knit fabrics of cotton, linen, wool, silk, rayon, and the new fibers; manufacturing and finishing processes; qualities, tests, uses, maintenance; explanation of technical terms and of characteristics determining comparative values; application to men's, women's, and children's apparel as well as to household items such as draperies, rugs, upholstery fabrics, blankets, linens, soaps, detergents, etc. The content of the course is somewhat flexible depending upon the needs and interests of the students enrolled. Field trips are taken to several of the textile mills and factories in the Twin Cities area. Repeated spring semester. No prerequisite.

Fall Semester
 W 7:00 Nicholson 122, Scholtes

Spring Semester
 W 7:00 Nicholson 122, Scholtes

TRAFFIC AND TRANSPORTATION

B.A. 71-72 Transportation: Services and Charges. 3 credits each semester. \$15.

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. Prerequisite: Economics 6-7.

Fall Semester

71 M 6:20 Vincent 1, Nightingale

Spring Semester

72 M 6:20 Vincent 1, Nightingale

B.A. 180-181 Senior Topics: Transportation. 3 credits each semester. \$15.

Advanced study of tariffs and tariff construction, of rate structures, and of auxiliary services, including problems thereon. Analysis of important current cases and decisions affecting shippers and carriers. Prerequisite: 71-72.

Fall Semester

180 M 8:05 Vincent 1, Nightingale

Spring Semester

181 M 8:05 Vincent 1, Nightingale

Advanced Traffic and Transportation I-II. 3 Extension credits each semester. \$15.

Advanced study of state and federal regulatory laws and U. S. Supreme Court cases governing rail and highway transportation. Attention to practice and procedure before rate and classification committees, state commissions, and the Interstate Commerce Commission. Preparation of informal, formal, and investigation and suspension cases before regulatory commissions. Prerequisite: B.A. 71-72 and B.A. 180 or equivalent.

Fall Semester

I T 6:20 Vincent 6, Nightingale

Spring Semester

II T 6:20 Vincent 6, Nightingale

Econ. 73 Labor Problems and Trade Unionism. See page 46.

Econ. 164 Labor Legislation and Social Insurance. See page 46.

B.A. 167 Introduction to Industrial Relations. See page 46.

Survey of Current Problems in Industrial Relations. 3 Extension credits. \$15.

Note—The content of this course changes each time it is given and as the course title indicates, deals with current materials. Hence, experienced industrial relations workers may wish to repeat this course at intervals.

A discussion workshop for advanced students concerned with sources of information about modern industrial relations concepts, policies and practices; the nature and operation of labor markets, collective bargaining, labor legislation and social insurance; selection and training, wages and hours, and other related topics. Each session will consist of a short lecture by a specialist in the specific topic under consideration, followed by a conference-type discussion period led by the guest speaker and the instructor. Course open to experienced union officers and business agents, personnel and industrial relations managers, and government officials doing industrial relations work. A limited number of students who cannot meet these requirements, but have successfully completed B.A. 167 (Personnel Administration), may also be admitted. Class will be limited and early registration is recommended. Prerequisite: consent of instructor.

Fall Semester

W 8:05 Vincent 2, Heneman and other members of Industrial Relations Center staff

Elements of Supervision. 3 Extension credits. \$15 plus \$1 materials fee.

A general discussion of the basic principles of foremanship. Survey of the problems of industrial relations and personnel management met with in day-to-day supervision with emphasis on human relations. Practical aspects of such problems as the status of the supervisor, selection, induction and training of employees, merit rating, giving orders, quality and cost control and labor legislation affecting supervisors. Extensive use of the class discussion technique and training films. No prerequisite. Repeated spring semester.

Fall Semester

Th 6:20 Vincent 6, Lindbom
Th 6:20 St. P. Ext. Center 204, Hamel

Spring Semester

Th 6:20 Vincent 6, Lindbom
Th 6:20 St. P. Ext. Center 204, Hamel

Advanced Supervision. 3 Extension credits. \$15.

Advanced supervision emphasizes techniques based upon the theory outlined in Elements of Supervision. It includes discussion of research into supervisory methods and practices and their relative success in application. Methods of supervisory training, morale measurement, job evaluation, job analysis, job classification, safety programs, wage and salary administration, labor legislation, principles of organization and communications are among the topics discussed. Extensive use is made of discussion method and case studies. Prerequisite: Elements of Supervision or consent of instructor.

Fall Semester

Th 8:05 Vincent 6, Boulger

Spring Semester

W 8:05 St. P. Ext. Center 214, Lindbom

Elements of Union Administration. 3 Extension credits. \$15.

A general discussion of the basic principles of local union administration, as encountered by business agents, shop stewards, and local union officers. Includes discussion of techniques used in union government and administration, collective bargaining and grievance, union-member relations, union-community relations, shop rules, and union leadership. Survey of problems of industrial relations met in day-to-day union administration with emphasis on human relations. No prerequisite.

Fall Semester

T 6:20 Vincent 2, Lindbom and Leonard

Psy. 122-126 Psychology of Individual Differences. See page 33.

Psy. 125-126 Psychology of Individual Differences. See page 33.

Psy. 144-145 Abnormal Psychology. See page 33.

B.A. 89 Production Management. See page 45.

For industrial engineering courses, see page 63.

ENGINEERING CLASSES

AERONAUTICAL ENGINEERING

Commercial Pilots' Ground School

The University Extension Division operates a Commercial Pilots' Ground School on a short course basis, designed to give prospective commercial air pilots thorough instruction in aerial navigation, meteorology, flight theory, aircraft structures, power plants, civil air regulations, aircraft instruments, radio aids and related subjects. The primary objective of the course is to prepare pilots for the C.A.A. written examination for the commercial pilot rating.

In each full course there are five "terms." Each term lasts five weeks, the class meeting on Tuesday and Thursday evenings, from 7:30 p.m. to 10:00 p.m., in Room 313 of the new Aeronautical Engineering Building on the Minneapolis Campus of the University. Instructor: Sam R. Hamilton.

- Term I:** Civil Air Regulations, Radio Aids and Instruments.
Dates: September 12, 1950 through October 12, 1950.
- Term II:** Navigation and the Use of Computers.
Dates: October 17, 1950 through November 16, 1950.
- Term III:** Meteorology.
Dates: November 21, 1950 through December 21, 1950.
- Term IV:** Flight Theory.
Dates: December 26, 1950, through January 25, 1951.
- Term V:** Engines and Aircraft.
Dates: January 30, 1951 through March 1, 1951.

Another series will be run following that listed above if enrolment is sufficient; consult any Extension Division office after January 30.

A student may enter the course at the beginning of any term, and may enroll for only one term or for any combination of terms, according to his needs. The fee is \$14.40 per term, making a total of \$72 if all five terms are taken. The total cost of textbooks and materials for all five terms is approximately \$10.

Registration may be made through any of the General Extension Division offices, or through the instructor. For more detailed information call Mr. Hamilton at CE 3431 or DE 2559.

Private Pilots' Ground School

This course is for student pilots who are seeking a pilot certificate with a private-pilot rating. The student enrolls in the same classes with prospective commercial pilots (see description of Commercial Pilots' Ground School, above), but attends only the first three meetings (7½ hours) of each term, plus approximately one-half hour for a term examination. The student thus receives a total of 40 hours of instruction.

A student may enter the course at the beginning of any term, and may enroll for only one term or for any combination of terms, according to his needs. The fee for the 8-hour term is \$5, making a total of \$25 if all five short terms are taken. The total cost of textbooks and computer for all five terms is approximately \$10.

Registration may be made through any of the General Extension Division offices, or through the instructor. For more detailed information call Mr. Hamilton at CE 3431 or DE 2559.

AGRICULTURAL ENGINEERING

42A Art Metal Work. 3 credits. \$15 plus \$1 laboratory fee.

A course designed for persons interested in creating articles of permanent beauty and value from metals, including copper, pewter, brass, steel, aluminum, nickel silver and sterling silver. Forming of plates, bowls, and trays; use of jeweler's saw in pierced work; etching; soft soldering; making candlesticks; book ends; desk sets; lamps; bracelets. Students may choose project and kind of metal. Open to men and women. Class limited to 25. No prerequisite.

Fall Semester

W 6:20 Agricultural Engineering 20, 106,
Dent

42B Art Metal Work. 3 credits. \$15 plus \$1 laboratory fee.

Silver soldering; use of flat graver; embossing and chasing; making silver chains; forging spoons in copper and silver; coloring metals with chemicals and heat; high temperature enameling; use of oxyacetylene torch in annealing, brazing and welding; working in plastics; grinding and polishing semiprecious stones. Open to men and women. This course may be taken either as a supplement to Agr. Eng. 42A or separately. Class limited to 25. No prerequisite.

Spring Semester

W 6:20 Agricultural Engineering 20, 106,
Dent

CIVIL ENGINEERING

Plain Concrete. 3 Extension credits. \$15.

Concrete materials and concrete mixtures. The course includes a study of concrete aggregate and cements, the design of concrete mixers, the computation of batch weights, batch volumes, and concrete costs, and a study of air-entrained concrete with methods of measuring air in concrete. Laboratory experiments in concrete mixtures will be included with the class participating as a group. Prerequisite: a knowledge of elementary algebra and elementary physics is desirable.

Fall Semester

Th 6:20 Experimental Engineering 110,
Thomas

Engineering Properties of Soils. 3 Extension credits. \$15.

A course intended for engineers and students who wish to become familiar with the basic principles of soil behavior, the terminology, the types of tests, and the application to practical problems. Origin and development of soils; their physical characteristics; and procedure of tests for their identification and suitability for use. Soil survey methods; field density tests; design of graded mixtures, soil stabilization, and theory of flexible base design. Prerequisite: consent of instructor.

Fall Semester

W 6:20 Experimental Engineering 110,
Kersten

Surveying I. 3 Extension credits. \$25.

Lectures and field problems in the use of engineer's steel tape, transit and level, adjustment of instruments, computation and platting of field notes, determination of areas of tracts and computation of earthwork volumes. Prerequisite: trigonometry. The class meets 4 hours one night a week in drafting room.

Fall Semester

W 6:20 Main Engineering 217, Fant

Surveying II. 3 Extension credits. \$25.

Lectures and field problems in simple horizontal curves and vertical curves, setting slope stakes for earthwork, topographic mapping by transit and stadia surveys and determination of azimuth by solar observations. Repeated in spring semester. Prerequisite: Surveying I. The class meets 4 hours one night a week in drafting room.

Fall Semester

W 6:20 Main Engineering 217, Klingel

Spring Semester

W 6:20 Main Engineering 217, Klingel

Industrial Statistics I-II. See Mathematics and Mechanics, page 58.

DRAWING AND DESCRIPTIVE GEOMETRY

1 Engineering Drawing. 3 credits. \$15.

Elements of drafting, geometry, sketching, lettering, dimensioning, conventions, working drawings, tracing. Repeated spring semester. No prerequisite.

Fall Semester

W 7:30 Main Engineering 101, Potter
W 7:30 St. P. Ext. Center 218, Springer
Th 7:30 Main Engineering 201, Bullen

Spring Semester

W 7:30 Main Engineering 101, Potter
W 7:30 St. P. Ext. Center 218, Springer
Th 7:30 Main Engineering 201, Bullen

2 Engineering Drawing. 3 credits. \$15.

Detail drawings, auxiliary views, sectional views, assembly drawings, tracing. Repeated spring semester. Prerequisite: Drawing 1 or consent of instructor.

Fall Semester

W 7:30 Main Engineering 101, Potter
W 7:30 St. P. Ext. Center 218, Springer
Th 7:30 Main Engineering 201, Bullen

Spring Semester

W 7:30 Main Engineering 101, Potter
W 7:30 St. P. Ext. Center 218, Springer
Th 7:30 Main Engineering 201, Bullen

3 Descriptive Geometry. 3 credits. \$15.

Elementary course in the methods of representation, correlated in part with analytical geometry. Graphical and algebraic solutions. Lectures, demonstrations, and drafting. Prerequisite: Drawing 2, Mathematics and Mechanics 11.

Fall Semester

W 7:00 Main Engineering 201, Quaid

20 Advanced Mechanical Drawing. 2 credits. \$10.

Working drawings, gearing, cams, developments, multiple auxiliary views, special projections. Prerequisite: Drawing 1.

Fall Semester

W 7:30 Main Engineering 201, Quaid

Spring Semester

W 7:30 St. P. Ext. Center 218, Springer

29 Aeronautical Drafting. 2 credits. \$10. Not offered 1950-51.

38 Reading Drawings. 2 credits. \$10.

Completion of view and section problems, translation exercises, reading problems from commercial drawings. Bills of material, calculation of volumes and weights from drawings. Prerequisite: Drawing 1 or equivalent experience.

Fall Semester	Spring Semester
W 7:30 Main Engineering 101, Potter	W 7:30 Main Engineering 101, Potter

52 Alignment Charts. 3 credits. \$15.

Design and construction of alignment charts for solving equations containing three or more variables using both uniform and functional straight line scales. Such charts are particularly useful in Engineering and other fields where problems of a recurrent nature occur. Prerequisite: Drawing 2, M.&M. 12, or permission of instructor.

Fall Semester
M 7:00 Main Engineering 201, Eggers

55 Production Illustration I-II. 3 Extension credits or 2 Institute of Technology credits (see below). \$15.

Pictorial drawing as used in industry. Detail and assembly drawing in pictorial form by the use of isometric, oblique, axonometric, and prospective projection. Students may register for either I or II in either semester. Two university credits in D.&D.G. 55 may be granted for completion of I, consult instructor.

Fall Semester	Spring Semester
W 7:30 TSF 203, Doseff	W 7:30 TSF 203, Doseff

118 Short Course in Curve Fitting. 3 credits. \$15.

The fitting of equations to experimental data and the determination of the constants involved by various graphical and algebraic methods including the method of "Least Squares." A practical course for engineers, scientists, and all others who deal with tests and the evaluation of the results obtained from tests. Prerequisite: Drawing 2, M.&M. 25, or permission of instructor.

Spring Semester
M 7:00 Main Engineering 201, Eggers

Industrial Design I-II. 3 Extension credits. \$15 plus \$2 materials fee.

This course takes up the fundamental principles of practical design, as applied to plastics, leather and other materials, used in the commercial field. It deals mostly with three-dimensional designs by carving or by modeling in plasticine, although it is preceded by study of two-dimensional design through drawing. No prerequisite. Students may register for either I or II in either semester, consult instructor.

Fall Semester	Spring Semester
W 7:30 TSF 203, Doseff	W 7:30 TSF 203, Doseff

Architectural Drafting I-II-III-IV. 3 Extension credits each semester. \$15.

A basic course for those needing training for work in architecture. In general the main objectives for each unit will be: I, Drafting techniques; II, Construction details; house plans; III, Pictorial presentation, perspective; IV, Calculations for beams, etc. Students may register for any unit in any semester, with consent of instructor.

Fall Semester	Spring Semester
T 7:00 Main Engineering 201, Smalley	T 7:00 Main Engineering 201, Smalley
Th 7:00 St. P. Mechanic Arts 101, Smalley	Th 7:00 St. P. Mechanic Arts 101, Smalley

ELECTRICAL ENGINEERING

Elements of Electric Circuits I-II. 5 Extension credits each semester. \$25.

Fundamental laws of direct-current circuits, the magnetic field and magnetic properties of iron and steel, induced and generated electromotive forces, electric fields, storage batteries. Fundamental laws of AC circuits, complex representation of AC quantities, series and parallel AC circuits, polyphase AC circuits, power measurements in AC circuits. No prerequisite.

Fall Semester	Spring Semester
I TTh 7:00 Electrical Engineering 237, Cartwright	II TTh 7:00 Electrical Engineering 237, Cartwright

Elements of Electronics I-II. 5 Extension credits each semester. \$25.

Electronic emission, conduction, through vacuums and gases; characteristics of vacuum tubes, of gas and vapor tubes, and of mercury pool tubes; amplifier circuits, trigger circuits, oscilloscopes, and control circuits; application of electronic devices to industry; electronic power devices. Prerequisite: 1-2 or equivalent in experience.

Fall Semester	Spring Semester
I TTh 7:00 Electrical Engineering 138, Pidcock	II TTh 7:00 Electrical Engineering 138, Pidcock

Elements of Electric Machinery I-II. 5 Extension credits each semester. \$25.

Theory of direct-current and alternating-current machinery. Study of operating characteristics. Elementary control equipment and maintenance. Prerequisite: Elements of Electric Circuits 1-2 or equivalent.

Fall Semester
I TTh 7:00 Electrical Engineering 321,
Weiner

Spring Semester
II TTh 7:00 Electrical Engineering 321,
Weiner

Fractional Horsepower Motor Assembly I-II. 3 Extension credits each semester. \$15 each unit plus cost of motor kit (approximately \$10).

Each member of the class will assemble a complete fractional horsepower AC motor. The assembly will be coordinated with a study and discussion of the various design problems. Upon completion of the motor assembly various performance tests will be made in the laboratory. The motor will be the property of the student. Prerequisite: consent of instructor.

Fall Semester
I W 7:00 Electrical Engineering 138,
Fillmore

Spring Semester
II W 7:00 Electrical Engineering 138,
Fillmore

GENERAL ENGINEERING**Use of Engineer's Slide Rule.** 1½ Extension credits. \$7.50.

Theory and computation practice necessary for those who wish to use the slide rule in ordinary office computations. Drills on fundamental processes. No prerequisite.

Fall Semester
Th 7:00 Main Engineering 217, Klingel

Building Material Estimating. 3 Extension credits. \$15.

Training in reading detailed blueprints and estimating quantities of materials or cubic yardage in excavations; measurements, picking off blueprints, estimating and figuring total amounts of concrete, brick, timber, and all kinds of steel buildings. This course is intended for the beginner who has no training or experience in reading blueprints or in estimating. Ability to use a slide rule is helpful but not necessary. No prerequisite.

Fall Semester
Th 8:05 Main Engineering 217, Klingel

Technical Discussions. See page 19.

INDUSTRIAL ENGINEERING

See pages 63, 64.

MATHEMATICS AND MECHANICS**Basic Mathematics.** 4½ Extension credits. \$22.50.

A practical course for shop men in industry or machine work, and for those who need an elementary background in mathematics. The work includes arithmetic through fractions, decimals, percentage; elementary geometry involving areas of plane figures, proportion, volumes and weights; elementary algebra; elementary trigonometry and logarithms. The course is also valuable as a refresher in elementary secondary mathematics. Class meets for two sessions a week for twelve weeks. Repeated spring semester. Prerequisite: grade school arithmetic.

October 2-December 21
MTh 6:20 Main Engineering 205, Laws

February 12-April 30
MTh 6:20 Main Engineering 205, Laws

Review of Collegiate Mathematics I-II. 5 Extension credits each semester. \$25.

These courses are not designed for *beginners* in any of the subject areas indicated but are to be considered as *refresher* courses for those who already have an adequate foundation in the prerequisite courses or their equivalent. They are especially designed for persons who may wish to apply mathematics to engineering and related subjects.

I: Equations, partial fractions, indices and surds, logarithms, trigonometry with applications-series (progressions, binomial theorem, exponential series, hyperbolic functions, logarithmic series). Plane analytical geometry, including conic sections, properties of conics, solid analytical geometry, the determination of empirical laws, differentiation, applications to kinematics, maximum and minimum points, points of inflection, applications to beam problems, approximations, partial differentiation, introduction to integration. Prerequisite: Analytic Geometry or consent of instructor.

II: Integration, work done by the expansion of a gas, multiple integrals, volumes of solids by integration, centers of mass, center of pressure, moment of inertia, deflection of beams, various methods of integration. Integration applied to dynamical problems, simple harmonic motion, mean values, polar coordinates, curvature and envelopes, complex numbers, Taylor's and Maclaurin's theorems, finite differences, harmonic analysis, use of differentials with simple applications. Prerequisite: Integral Calculus or consent of instructor.

Fall Semester
I Th 7:00 Main Engineering 203, Wilcox

Spring Semester
II Th 7:00 Main Engineering 203, Wilcox

Elementary Algebra I-II.† Credit toward entrance. \$15.

Elements of algebra to quadratic equations. No prerequisite.

Fall Semester

I Th 8:05 Main Engineering 205, Laws

Spring Semester

II Th 8:05 Main Engineering 205, Laws

Plane Geometry I-II Combined. Credit: one entrance unit. \$30.

Elements of plane geometry, equivalent to one year of high school geometry; designed especially for those who wish to clear up their University of Minnesota entrance requirements. Two sessions a week.

Fall Semester

MW 6:20 Main Engineering 203, Schuck

Solid Geometry. Credit toward entrance. \$15.

Standard theorems and exercises; practice in special proofs and original exercises. Extra sessions arranged during fall quarter in order to complete a full course in a shorter period. Repeated spring semester. Prerequisite: plane geometry.

Fall Quarter

M 8:05 Main Engineering 203, Schuck

Spring Semester

M 6:20 Main Engineering 203, Schuck

9 Higher Algebra. 5 credits. \$25.

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 in Institute of Technology. Repeated spring semester. Prerequisite: elementary algebra.

Fall Semester

M 7:00 Main Engineering 106, Matson

M 7:00 St. P. Ext. Center 204, Scott

Spring Semester

Th 7:00 Main Engineering 227, Braden

11 College Algebra. 5 credits. \$25.

A review of fundamental operations, factoring, fractions, linear simultaneous equations including solution by determinants, exponents and radicals, complex numbers, and quadratic equations. Ratio, proportion, variation, binomial theorem, progressions, theory of equations and numerical solution of equations of higher degree, partial fractions and infinite series. Repeated spring semester. Prerequisite: Higher Algebra.

Fall Semester

M 7:00 Main Engineering 215, Braden

Th 7:00 Main Engineering 215, Smith

Spring Semester

M 7:00 Main Engineering 215, Matson

M 7:00 St. P. Ext. Center 217, Scott

12 Trigonometry. 5 credits. \$25.

Logarithms, trigonometric functions, plane right triangles, fundamental relations between functions, various formulas, identities and equations, graphical representation, inverse functions, oblique triangles, de Moivre's theorem. Introduction to spherical trigonometry and study of the right spherical triangle. Repeated spring semester. Prerequisite: College Algebra 11 or equivalent.

Fall Semester

M 7:00 Main Engineering 227

W 7:00 Main Engineering 205

Th 7:06 St. P. Ext. Center 214, Polansky

Spring Semester

Th 7:00 Main Engineering 215, Smith

13 Analytic Geometry. 5 credits. \$25.

Rectangular coordinate systems in a plane, locus and equation, study of the straight line and its equations, the conic sections, transformation of coordinates, polar coordinates, higher plane curves and various other topics in plane analytic geometry. Introduction to solid analytic geometry. Prerequisite: College Algebra 11 and Trigonometry 12 or equivalent.

Fall Semester

T 7:00 Main Engineering 203, Wilcox

Spring Semester

W 7:00 Main Engineering 205

Th 7:00 St. P. Ext. Center 214, Polansky

24 Differential Calculus. 5 credits. \$25.

Functions and limits, the derivative. Applications of the derivative to problems in rates, maxima and minima, inflections, curve tracing. Differentials, approximation with differentials, polar coordinates, parametric equations, curvature, indeterminate forms, partial differentiation, infinite series. Prerequisite: Analytic Geometry 13 or equivalent.

Fall Semester

T 7:00 Main Engineering 106, Fischer

Spring Semester

T 7:00 Main Engineering 203, Wilcox

25 Integral Calculus. 5 credits. \$25.

The integration of standard elementary forms, integration by various devices, the evaluation of constant of integration, the definite integral, areas, volumes, length of curve, area of surfaces, centroids, moments of inertia, fluid pressures, multiple integration with applications, infinite series and the expansion of functions. Prerequisite: Differential Calculus 24 or equivalent.

Spring Semester

T 7:00 Main Engineering 106, Fischer

† See Information, page 5.

26 Technical Mechanics—Statics. 5 credits. \$25.

The composition and resolution of force systems in a plane and in space; conditions for equilibrium of forces; applications to rigid bodies and structures; friction; centroids and center of gravity; moment of inertia. Prerequisite: Integral Calculus 25 or equivalent.

Fall Semester

Th 7:00 Main Engineering 106, Fischer

80 Elementary Differential Equations. 3 credits. \$15.

A first course in ordinary differential equations. Equations of the first order and various degrees, singular solutions. Equations of higher order with particular attention to linear equations. Total differential equations and systems of equations; integration in series. Prerequisite: Integral Calculus 25 or equivalent.

Fall Semester

W 6:20 Main Engineering 106, Fischer

127 Technical Mechanics—Dynamics. 5 credits. \$25.

The kinematics and dynamics of particles and rigid bodies. Translation; rotation; plane motion. The application of work-energy equations. Impulse and momentum; mechanical vibrations. Prerequisite: Statics.

Spring Semester

Th 7:00 Main Engineering 106, Fischer

128 Strength of Materials. 5 credits. \$25.

Mechanical and elastic properties of materials of construction; beams, shafts, and columns; hollow cylinder rollers; plates, curved bars, and springs; combined stresses, dynamic stresses, and true stresses. Prerequisite: calculus and technical mechanics.

Spring Semester

M 7:00 Main Engineering 106, Fischer

Basic Industrial Statistics I. 5 Extension credits. \$25.

Principles of statistical methods applied to engineering and industrial problems; collection and interpretation of data, averages and measures of variation, charts and graphs, introduction to probability and sampling theory. The above concepts in statistics form the basis for Industrial Quality Control. Class meets for a period of 3 hours each week. Prerequisite: Higher Algebra or equivalent with consent of instructor.

Fall Semester

W 7:00 Main Engineering 104, McElrath

Basic Industrial Statistics II. 5 Extension credits. \$25.

A continuation of Basic Industrial Statistics I with accent on industrial applications covering: small sampling tests, elements of curve fitting, some aspects of tolerances, introduction to experimental design. Class meets for a period of 3 hours each week. Prerequisite: Basic Industrial Statistics I or equivalent with consent of instructor.

Spring Semester

W 7:00 Main Engineering 104, McElrath

Advanced Industrial Statistics I. 5 Extension credits. \$25.

Topics in industrial statistics including: Acceptance sampling; likelihood method of testing statistical hypotheses; sequential analysis of statistical data. Prerequisite: Basic Industrial Statistics II or consent of instructor.

Fall Semester

M 7:00 Main Engineering 104, McElrath

Advanced Industrial Statistics II. 5 Extension credits. \$25.

Principle of maximum likelihood; L_0 and L_1 tests; power of a test; simple and composite hypotheses; topics in experimental design; components of variance. Prerequisite: Advanced Industrial Statistics I or consent of instructor.

Spring Semester

M 7:00 Main Engineering 104, McElrath

MECHANICAL ENGINEERING**Use of Mechanical Engineering Handbooks I-II.** 3 Extension credits each semester. \$15.

The purpose of this course is to train and acquaint those engaged in industrial work with the technical information readily available in the various mechanical engineering handbooks. Special emphasis is given to the application of handbook data and information to the solution of a wide variety of practical problems. The course includes a review of the various current mechanical handbooks and classification of these as to type of technical data. Typical problems involve standard specifications, design data, selection of mechanical equipment and other general mechanical subjects. It is an excellent refresher course for engineers and a practical basic course for others in the industrial field. Part II is a continuation of Part I in which more emphasis is given to the solution of comprehensive problems utilizing handbook information alone and the many shortcuts in problem solution possible through the efficient use of handbook data are stressed. Twelve 3-hour meetings. No prerequisite.

Fall Quarter

I Th 7:00 Mech. Engineering 214, LaJoy

February 15-May 3

II Th 7:00 Mech. Engineering 214, LaJoy

Mechanisms of Modern Machinery I-II. 3 Extension credits each semester. \$15.

A course designed to give a fundamental background in mechanical movements. Part I includes a short historical résumé of inventions which have led to our present-day mechanization; a discussion of the modern components of machinery involved in industrial, automotive, and agricultural applications will follow, including toggle mechanism, quick-return mechanism, straight line motion, cams, gear trains, clamps, etc. Part II is a continuation of Part I with special emphasis on mechanisms involved in packaging, vending, and conveying applications. In addition, some time will be devoted to complete analysis of mechanisms in general. Twelve 3-hour meetings. Prerequisite: consult instructor.

Fall Quarter

I W 7:00 Mech. Engineering 208, Bailiff

February 14-May 2

II W 7:00 Mech. Engineering 208, Bailiff

Instrumentation and Automatic Control I. 3 Extension credits. \$15 plus \$5 laboratory fee.

An elementary course planned to cover the principle of operation of the many instruments and automatic controls in commercial use today. Control instruments and control circuits will be studied in detail. Both electrical and pneumatic methods of obtaining control modes such as on-off or two-position response and throttling of modulating responses will be covered. The course will be divided between lecture and laboratory. In the laboratory students will be familiarized with the actual instruments and control circuits. This will be integrated with lecture work and control design problems. Twelve 3-hour meetings. Prerequisite: consult instructor.

Fall Quarter

W 7:00 Mech. Engineering 214, LaJoy

Instrumentation and Automatic Control II. 3 Extension credits. \$15 plus \$5 laboratory fee.

This course is planned to cover more of the industrial instruments and automatic controls. The theory of control will be covered mathematically, descriptively and graphically. Basic modes of control built into commercial industrial controllers such as proportional, automatic reset and rate response will be covered in detail. Methods of obtaining these responses such as electrically, hydraulically or pneumatically will be analyzed. Typical industrial control circuits will be investigated. This will involve analysis of all component parts such as the process, measuring means, recording or indicating instrument, controller, and final control elements. Twelve 3-hour meetings. Prerequisite: consult instructor.

February 14-May 2

W 7:00 Mech. Engineering 214, LaJoy

Machine Tool Operation I-II. 4½ Extension credits each semester. \$22.50 plus \$5 laboratory fee.

Lecture and laboratory covering the selection and use of jigs, fixtures, gauges, and machine tools for the manufacture of a ½ H.P. electrical motor. Selection of the proper cutting tools and determination of the machine speeds for various materials. Preparation of manufacturing analysis and estimation of the machining time for the manufacture of metal products in small and large quantities. The laboratory project (ordinarily an electric motor) can be purchased at cost of material. Class limited to 20 students, accepted in order of registration. Prerequisite for Part II: previous semester's work or equivalent.

Fall Semester

I M 7:00 Mech. Engineering 114, Crowder

Spring Semester

II M 7:00 Mech. Engineering 114, Crowder

Machine Tool Operation III. 4½ Extension credits. \$22.50 plus \$5 laboratory fee.

Lecture and laboratory covering the use of jigs, fixtures, gauges and machine tools required to manufacture a 14 x 24-inch all geared head quick change gear box lathe. Class limited to 20 students accepted in order of registration. Prerequisite: Machine Tool Operation II or equivalent.

Fall Semester

M 7:00 Mech. Engineering 110, Crowder

Machine Tool Operation IV. 4½ Extension credits. \$22.50 plus \$5 laboratory fee.

Lecture and laboratory covering the planning and set-up of turret lathes, gear hobbing machines, gear shapers, gear finishing machines, thread millers, thread grinders, and automatic screw machines to manufacture parts required to make a 14 x 24-inch all geared head quick change gear box lathe. Class limited to 20 students accepted in order of registration. Prerequisite: Machine Tool III or equivalent.

Spring Semester

M 7:00 Mech. Engineering 110, Crowder

Tool Design I-II. 3 Extension credits each unit. \$15.

Analysis of piece parts and selection of proper tools and machines for the various operations. Determination of machining speeds and estimating the production time for various types of jigs and fixtures. Selection and design of the best type of jig, fixture, and special gauges for the manufacture of the piece parts. Twelve 3-hour meetings. Prerequisite: Product Analysis I or Quality Control, or equivalent in shop experience.

Fall Quarter

I T 7:00 Mech. Engineering 214, Crowder

February 13-May 1

II T 7:00 Mech. Engineering 214, Crowder

Press Working of Metals I-II. 3 Extension credits each semester. \$15.

This is a design course dealing with: types of presses and their selection; preliminary steps in die engineering; specifications for selection of sheet materials and die steels; bending, forming, embossing, folding, shaving, burnishing, broaching and trimming dies; drawing dies; coining, swaging and cold sizing dies; temporary dies and low-cost tools for limited production; two-step die operations and progressive dies; assembly dies; considerations given to the press working of stainless steels, monel metal, and the non-metallic materials—fiber, rubber, and rawhide. Twelve 3-hour meetings.

Fall Quarter **February 12-April 30**

I M 7:00 Mech. Engineering 214, Wolff II M 7:00 Mech. Engineering 214, Wolff

Fundamentals of Foundry Practice. 4½ Extension credits. \$22.50 plus \$4 laboratory fee.

A lecture and laboratory course dealing with the molding techniques, core making, melting, and cleaning of ferrous and nonferrous castings. Engineering properties of castings, casting design, standard foundry material tests.

Fall Semester

M 7:00 Mech. Engineering 102, Uppgren

Beginning Plastics. 3 Extension credits. \$15 plus \$2 materials fee.

A laboratory and lecture course dealing with the materials, equipment, and methods used in the fabrication of plastic products. No prerequisite.

Spring Semester

Th 7:30 Mech. Engineering 114, Holtby

Servomechanisms. 3 Extension credits. \$15.

An elementary course covering the basic principles of servomechanisms. A brief review will cover the necessary mathematics. Elementary control systems will be discussed as well as basic error-indicators or follow-up mechanisms, both mechanical and electrical. Detailed analysis will also be made of servo systems with various types of damping. Methods of obtaining desired types of damping and other required system characteristics will be discussed in detail. Prerequisite: mathematics through Calculus or the consent of the instructor. Repeated spring semester.

Fall Semester **Spring Semester**

W 7:00 Mech. Engineering 114, Schiavone W 7:00 Mech. Engineering 114, Schiavone

Machine Design I-II. 3 Extension credits each semester. \$15.

Fundamental principles of design of machine elements: lubrication, theory and application; friction drives, shafts, screws, gears, belts, connectors, springs, flywheels, machine frames, shrink fits. Prerequisite: consult instructor.

Fall Semester **Spring Semester**

I M 7:00 Mech. Engineering 314, Larsen II M 7:00 Mech. Engineering 314, Larsen

Automotive Engines—Operation and Maintenance I-II. 3 Extension credits each semester. \$15 plus \$1 laboratory fee.

A study of construction and maintenance of principal engine parts, ignition systems, carburetors, lubricants, fuels, coolants, and anti-freezes in the automobile, truck, and bus engines of the gasoline type. No prerequisite.

Fall Semester **Spring Semester**

I Th 7:00 Mech. Engineering 321, Melby II Th 7:00 Mech. Engineering 321, Melby

Diesel Engines—Operation and Maintenance I-II. 3 Extension credits each semester. \$15 plus \$1 laboratory fee.

A course in which particular emphasis is put on operation and maintenance problems. Principles of operation, typical construction, problems of fuels and lubrication and comparison with other types of power plants. No prerequisite.

Fall Semester **Spring Semester**

I T 7:00 Mech. Engineering 321, Lindquist II T 7:00 Mech. Engineering 321, Lindquist

Aircraft Power Plants I-II. 3 Extension credits each semester. \$15 plus \$1 laboratory fee.

Basic theory of jet propulsion, gas turbines, and reciprocating engines. Engine types, construction, compressor and turbine configurations, and combustion and combustion chambers. Problems of lubrication, cooling and ignition. Performance and performance charts with relation to operating variables such as speed, temperature, pressure and altitude. Fuels, fuel specifications, metering systems and fuel controls.

Fall Semester **Spring Semester**

I W 7:00 Mech. Engineering 321, Murphy II W 7:00 Mech. Engineering 321, Murphy

Product Engineering. 3 Extension credits. \$15.

This course is designed to be of special value to men engaged in machine design, development, product design, and manufacturing. The course consists of a series of lectures and demonstrations by instructors from the University and from the manufacturing field. Subjects discussed will include plating processes, organic finishes, aluminum finishes, abrasives, plastics, adhesives, sketching, metal spinning, and industrial design. All lectures will be from a machine design viewpoint. Twelve three-hour meetings. No prerequisite.

Fall Quarter

T 7:00 Mech. Engineering 18, Larsen

Heating, Ventilating, and Air Conditioning I-II. † 4½ Extension credits each semester. \$22.50.

A course designed to present the fundamentals of heating, ventilating, and air conditioning to those interested in designing, installing, selling, or recommending the modern type of appliances for heating, ventilating, and air conditioning installations. The subject matter of this course deals with terminology; heat transfer and heat transmission coefficients; all sources of heat loss from a structure; heating loads and heating costs; determination of temperatures in various parts of a structure; vapor transmission, problems; design of gravity and mechanical warm air heating systems; design of gravity and forced hot water heating systems; design of wet and dry panel heating systems; design of steam heating systems; fuels and combustion; and combustion equipment selection and controls. Class limited to 40 students accepted in order of registration. Prerequisite: high school mathematics or consent of instructor.

Fall Semester

I W 7:00 Mech. Engineering 302, Borry

Spring Semester

II W 7:00 Mech. Engineering 302, Borry

Heating, Ventilating, and Air Conditioning III-IV. † 4½ Extension credits each semester. \$22.50.

A continuation of Heating, Ventilating, and Air Conditioning I-II with special emphasis on air conditioning. The subject matter to be covered will include heat and thermodynamics, properties of air and water vapor mixtures, the psychrometric chart and its application to problems, physiological principles, the fundamentals of air flow and pressure losses, principles of air distribution, heat gains and cooling load calculations, air duct design, humidification and dehumidification, air cleaning devices, characteristics and selection of fans, noise and sound control, and vibration problems. Class limited to 40 students accepted in order of registration. Prerequisite: I-II or consent of instructor.

Fall Semester

III T 7:00 Mech. Engineering 302,
Anderson

Spring Semester

IV T 7:00 Mech. Engineering 302,
Anderson

Refrigeration I-II. 4½ Extension credits each semester. \$22.50.

An elementary course for those engaged in the design, construction, maintenance, manufacture, and sale of refrigeration equipment. Fundamental terms, concepts, definitions; basic refrigeration cycles including compression, steam jet and absorption refrigeration; compressors, evaporators, and condensers; refrigeration controls, thermostatic and automatic expansion valves, high and low side-float systems and capillary tubes; psychrometry; refrigerants; high, intermediate and low temperature applications of refrigeration; determination of cooling and refrigeration loads; calculation of heat transfer coefficients; laboratory demonstrations of refrigeration equipment. Prerequisite: consult instructor.

Fall Semester

I Th 7:00 Mech. Engineering 302, Jordan

Spring Semester

II Th 7:00 Mech. Engineering 302, Jordan

Production Control. See Production Planning and Control, page 63.

Time Study. See Work Measurement and Production Standards, page 63.

Motion Study. See Work Simplification, page 63.

Engineering Plant Layout. See Industrial Plant Layout, page 63.

Elementary Quality Control. See Elements of Quality Control, page 64.

Industrial Safety and Hygiene. See page 64.

Petroleum Products and Testing. 3 Extension credits. \$15.

The lectures will cover chemical composition of petroleum and the unit processes used in refining petroleum. Characteristics and properties of petroleum products, the significance of test results and their relation with behavior of petroleum products in service will be discussed in detail.

Fall Semester

T 7:30 Experimental Engineering 110, Peterson

† See Information, page 5.

METALLOGRAPHY

1-2 Metallography and Heat Treatment. 3 Extension credits each semester. \$15 plus \$2 laboratory fee.

A beginning course for those engaged in practical heat treatment, metal working, specification writing, buying or selling steel. Lectures and laboratory work in pyrometry, microscopic examination of metals, heat treatment of steel, case hardening, and specifications. Second semester: hardenability and weldability, hardenability tests, SAE alloy steels, tool and high speed steels, stainless steels, bearing metals, brasses, aluminum alloys. No prerequisite but 1 must precede 2 unless student has had experience in heat treatment.

Fall Semester

1 T 7:00 Appleby Hall 315, Jerabek

Spring Semester

2 T 7:00 Appleby Hall 315, Jerabek

MILLING ENGINEERING

Flour Milling Survey. 3 Extension credits. \$15.

The story of the milling process from wheat to flour with business and economic consideration of general interest is told in a series of lectures, plant trips and demonstrations designed particularly for those in non-operating positions who wish to know more of their chosen industry. Class limited to 50 students. No prerequisite.

Fall Semester

Th 6:45 McKnight Bldg. 250, MacKenzie and others

Advanced Analytical Methods for Cereal Chemists. 3 Extension credits. \$15.

Application of recent developments in analytical technique in cereal research and products control. A series of lectures by qualified specialists with demonstrations where possible. Class limited to 25 students. Prerequisite: consent of instructor.

Fall Semester

T 6:20 690 N. W. Bank Bldg.

Products Control. 3 Extension credits. \$15.

The University of Minnesota cooperates with the American Association of Cereal Chemists in presenting a series of lectures on policy and practice in the control of product quality in flour milling and grain processing industries. Class limited to 50 students. No prerequisite.

Spring Semester

Th 6:45 McKnight Bldg. 250

Trading Floor Operations. 3 Extension credits. \$15.

Procedures in cash and futures operations on the Minneapolis Grain Exchange are presented in a series of integrated lectures and problems designed for newcomers to the grain trade. Operations will be demonstrated in laboratory sessions followed by observations on the trading floor. Class limited to 40 students. No prerequisite.

Winter Quarter

Th 6:45 McKnight Bldg. 250, Cox

Advanced Problems in Grain Marketing. 3 Extension credits. \$15.

An analysis of some of the more important problems that arise in grain marketing such as transit privileges, hedging and spreading operations, clearing procedures, price relationships, government controls, and related problems. In order to provide ample opportunity for participation by the members of the class in the general discussions, the enrollment will be limited to those with adequate previous training and experience. Class limited to 20 students. Prerequisite: three years of work experience and employer's recommendation.

Winter Quarter

T 4:00-6:30 N. W. Bank Bldg. 690, Cox and others

Practical Problems in Flour Milling. 3 Extension credits. \$15.

A group study program designed for advanced students and young men in operative positions covering mill control, grain cleaning, bulk storage, sanitation, maintenance and recent developments in milling techniques. Lectures and discussion by qualified men from industry. Prerequisite: consent of instructor.

Fall Semester

T 6:45 McKnight Bldg. 250, MacKenzie and others

INDUSTRIAL ENGINEERING CLASSES

The Extension Division, in cooperation with the Industrial Engineering Division of the Mechanical Engineering Department, is inaugurating this year a sequence of courses leading to the award of Junior and Senior Certificates of Industrial Engineering (see page 10 for certificate requirements).

The purpose of this program is to train people employed in industry or business for positions in time study, work simplification, production control, quality control, and related functions. The courses are also intended for supervisors and others who may be concerned with these activities although not directly engaged in them.

Industrial engineering principles and techniques are applied not only in manufacturing, but in warehouse operation, agriculture, offices, retail stores, mail order houses, and service industries such as laundries, hotels, and garages.

The industrial engineering classes offered this year are listed in full detail below. Other evening classes in economics, business administration, and engineering which are designated as certificate requirements are listed below by title only with cross reference to pages where their descriptions and schedules appear in detail. For the full list of required and suggested courses, see page 10.

Freshman Composition 4. See page 19.

D.&D.G.1,2,3. See page 54.

M.&M.11,12,13. See page 57.

Econ.6-7. Principles of Economics. See page 44.

B.A.89. Production Management. See page 45.

Econ.5. Elements of Statistics. See page 44.

Basic Industrial Statistics I. See page 58.

Machine Tool Operation I-II. See page 59.

Production Planning and Control. 3 Extension credits. \$15.

Modern methods for effectively coordinating manpower, materials and equipment with sales are presented. Principles and applications of systems for routing, scheduling, inventory control and determination of economic lot sizes are discussed with regard to specific industries. Students are invited to bring topics for discussion. No prerequisite.

Fall Semester

T 6:20 Mech. Engineering 106, Tillotson

Work Simplification (Motion Study). 3 Extension credits. \$15 plus \$1 laboratory fee.

Men and women in all fields can apply the common sense principles of work simplification to eliminate unnecessary effort and waste motion. Lectures in the use of process charts, operation charts and micromotion study are followed by practice on laboratory problems. Class limited to 25 students accepted in order of registration. Twelve 3-hour meetings, beginning January 8. No prerequisite.

January 8-March 26

M 7:00 Mech. Engineering 106, Imhoff

Work Measurement and Production Standards (Time Study). 3 Extension credits. \$15 plus \$1 laboratory fee.

Measures of productivity for wage incentives, accounting, planning and labor relations are discussed in a series of lectures on principles and practice in time study, motion-time analysis, job standardization and maintenance of production standards. Laboratory periods are provided. Twelve 3-hour meetings. Repeated spring quarter. No prerequisite.

Fall Quarter

M 7:00 Mech. Engineering 106, Block

Spring Quarter

M 7:00 Mech. Engineering 106, Scheele

Industrial Plant Layout. 4½ Extension credits. \$22.50 plus \$2 laboratory fee.

Lectures on the application of industrial engineering principles in simplifying and improving the layout of manufacturing plants, shops, and warehouses and in planning new layouts. Laboratory studies include the use of flow charts, the determination of equipment and space requirements, and the use of templates and scale models in planning new layouts. Students are invited to bring their own problems for laboratory analysis. Class limited to 25 students accepted in order of registration. Class meets for 2½ hours. Prerequisite: Work Simplification, concurrent registration or consent of instructor.

Spring Semester

T 7:00 Mech. Engineering 106, MacKenzie

Elements of Quality Control. 4½ Extension credits. \$22.50.

Determination of quality requirements and their relation to manufacturing costs. Establishment of quality control standards; inspection procedures and organization. Use of statistical sampling techniques and control charts for more effective inspection and reduction of costs. For those engaged in quality control and others such as production supervisors, plant managers, and design engineers who are concerned with quality problems. Class meets for 2½ hour period. Prerequisite: consent of instructor.

Fall Semester

W 7:00 Mech. Engineering 106, Scheele

Econ. 73 Labor Problems and Trade Unionism. See page 46.

B.A. 167 Introduction to Industrial Relations. See page 46.

B.A. 133 Standard Cost Accounting and Distribution Costs. See page 42.

Elements of Supervision. See page 51.

Wage and Salary Administration. See page 52.

Industrial Safety and Hygiene. 3 Extension credits. \$15.

Major industrial hazards are reviewed and preventive measures are discussed. Safe practices in relation to production equipment, work procedures, storage and handling of materials, and the layout of industrial plants are studied. Consideration is given to the organization and administration of effective industrial safety and hygiene programs. Course is intended for production supervisors and engineers as well as those actively engaged in industrial safety work. Prerequisite: consult instructor.

Spring Semester

Th 6:20 Mech. Engineering 106, Lee

FACULTY

Immanuel C. Fischer, M.S., Assistant Professor of Engineering
 Leah M. Lewis, B.S., Assistant Professor of Art
 Wendell White, Ph.D., Associate Professor of Psychology
 Helen P. Mudgett, M.A., Assistant Professor of Intercultural Education

Note: Owing to uncertainties of some departments as to future staff and unavoidable last minute additions and changes, this list is necessarily incomplete.

Hans C. Aarsleff, Instructor in Scandinavian
 Helen Acker, M.A., Instructor in English
 Lauress Ackman, LL.B., Instructor in Business Law
 Eduardo Albertal, M.A., Instructor in Economics
 James Aliferis, Ph.D., Associate Professor of Music
 Harold B. Allen, Ph.D., Assistant Professor of English
 Robert J. Ames, M.S., Instructor in General Studies
 George E. Anderson, M.S.(M.E.), Instructor in Mechanical Engineering
 Ernest A. Bailiff, B.Aero.E., B.M.E., Instructor in Mechanical Engineering
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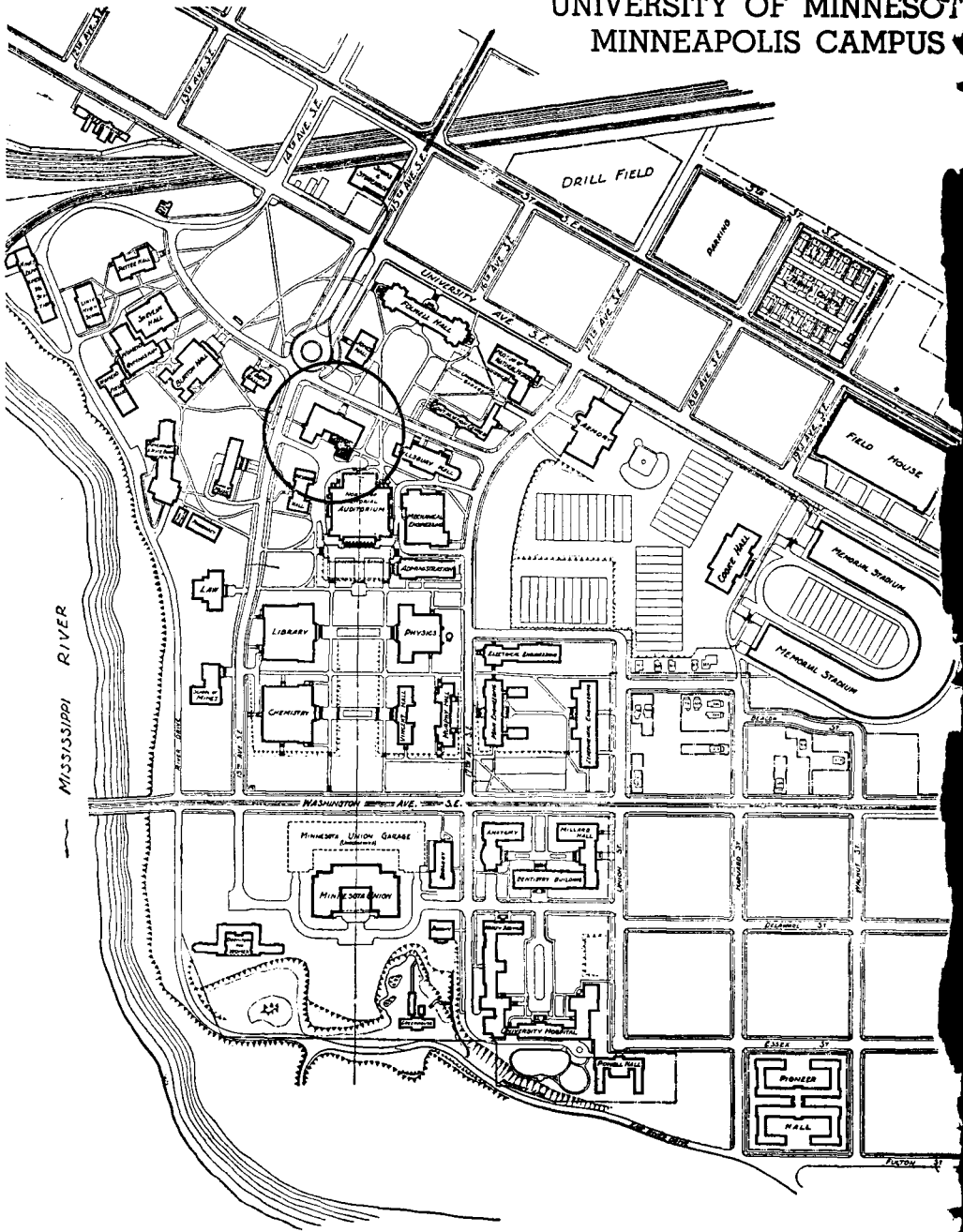
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INFORMATION

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Service Personnel, see page 8.

Refunds, see page 7.

Am I Eligible to Take These Courses?

The University's correspondence courses are open to everyone who can handle them successfully.

How Much Do They Cost?

Most courses cost \$15. Some cost more or less than this amount, and some involve a small materials fee. The fees for each course are stated in the description of courses further on in this bulletin.

Does This Cost Include Books?

No; you must buy your own books or borrow them from a library. Nor does the cost of the course cover apparatus such as a drawing set or slide rule.

To assist correspondence students, the Nicholson Hall Bookstore, University of Minnesota has made special effort to stock books required in correspondence courses. If you cannot locate the texts, write to the bookstore or to the Correspondence Study Department.

When Can I Begin My Course?

At any time. This is one of the great advantages of correspondence study.

How Long Will It Take Me to Finish the Course?

No course of three credits or more should be completed in less than six weeks. Students, teachers, and others working against a deadline for the submission of credits must take full responsibility for arranging the work in such a manner as to allow ample time for completion, including the final examination.

Please note that we cannot guarantee prompt lesson service during vacations.

Your registration is good for one year. If you don't complete your course in a year you can keep it in force for another year by paying a \$1 **reinstatement fee**. Only under very unusual circumstances will a second reinstatement be granted.

What Is a Correspondence Course Like? How Does It Work?

Each course is based on a study guide. The **study guide** begins with an introduction to the course. The **introduction** gives an overview of the course, tells you what books you need, and shows you how to do the work of the course. The remainder of the study guide is made up of the lessons of the course. Each **lesson** includes a **study assignment**, **study notes** (and sometimes study questions), and a **written assignment**.

In general you proceed with each lesson as follows: first, read the study notes; next, do your study assignment in the textbook; last, prepare your written assignment and send it to the Correspondence Study Department at the University. Your instructor will read the written assignment and return it to you with his corrections and suggestions. After you complete all the lessons in this way you take the final examination.

Can Veterans Enroll under G.I. Bill of Rights?

YES. Eligible veterans may have tuition and book costs of the University of Minnesota correspondence courses paid under G.I. Bill of Rights or Vocational Rehabilitation. Veterans interested in this type of study should secure the Certificate of Eligibility and Entitlement from the nearest Veterans Administration. Those under Vocational Rehabilitation or On-the-Job-Training should consult their training officer. A certificate or other proper authorization from the Veterans Administration is needed for registration. Write to Correspondence Study Department for further details concerning enrolment.

What Are the Advantages and Disadvantages of Correspondence Study?

The advantages: (1) You can start the course at any time. (2) You can work on it at your own convenience. (3) You can proceed swiftly or leisurely, as you prefer. (4) You don't have to come to the campus or waste time in travel. (5) You escape the nuisance of scribbling notes on classroom lectures; instead you receive your notes direct from your instructor, in carefully organized, permanent form. (6) You get individual attention from your instructor. (7) You get practice in digging out ideas, organizing them, and expressing them in writing.

The disadvantages: (1) Most correspondence students do not have full access to a university library. (2) Correspondence study is impersonal in that face-to-face relationships are absent. (3) It is a lonely job, lacking the stimulation of group study. (4) It requires more work and harder work than classroom study. (5) It is all too easy to put off doing your lesson "till tomorrow."

In summary, correspondence study is a waste of time and money for the shiftless, dilatory student. But for the serious student it offers a unique opportunity to work toward what has been well called the goal of all adult education, namely, the independent pursuit of learning.

Who Are the Instructors?

Most of them are members of the university faculties; others are chosen from local professions and businesses because of special knowledge or experience. Instructors named in this bulletin will ordinarily teach as scheduled, but unforeseen difficulties may interfere with these assignments.

Where Can I Get Advice about a Program of Study?

The Correspondence Study Department advisers will assist in the selection of individual courses and of programs of study leading to occupational objectives and Extension Certificates. They also assist students to make contact with advisers in the various colleges of the University

for information on programs of study leading to degrees. When you write or call for such advice, give full information about your past training, educational experience and your objectives.

The Correspondence Study Department is a part of the General Extension Division. The division is housed in the east wing of Nicholson Hall (Old Union Building) on the Minneapolis Campus. The main office of the Correspondence Department is Room 251, east wing, Nicholson Hall. For telephone inquiries call LI 8791 or MI 3965.

How Do I Register for a Correspondence Course?

Simply fill out the registration form and mail it to the Correspondence Study Department at the University, along with the fee indicated in the description of the course you want. **You will find a registration blank with this bulletin.** Payment should be made by postoffice or express money order, personal check, or draft; made out to the University of Minnesota; and drawn for the exact amount of the fee.

To help you with your registration, here is a **sample course description**, with explanatory comment:

Ag.Ed. 54. Rural Education and Community Leadership. The organization and administration of a progressive program of rural education. Problems involving the school plant, the curriculum, the teachers, and guidance for rural youth. The school as a community center; organizing educational, social, and recreational activities. The objectives, organization, and operation of youth programs, clubs, fairs, festivals, and the many other desirable educative features of rural community life. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Kitts

The **numbers** and **titles** of correspondence courses are usually the same as those of corresponding campus courses.

Sometimes the letter **c** follows the course number; this means that the course is a material modification of the campus course for correspondence purposes or that there is no parallel campus course.

Capital letters preceding the course number refer to university colleges, departments, and units: A. means School of Agriculture, Ag. means College of Agriculture, Ag. Ed. means Agriculture Education, B.A. means Business Administration, etc. More often, the college, department, or unit in which the course in question carries credit is indicated by the subhead in the bulletin.

The **dagger** (†) means that all parts of the marked sequence must be completed before credit is given for any part.

Next comes the **description** of the course, ending with the prerequisite—if any. **Prerequisites** refer to other courses, which, in the judgment of the department concerned, should precede the course in question. Prerequisites are usually waived for noncredit students and are sometimes waived for credit students; if you cannot meet the prerequisite of the course you want, write to the department for advice.

The description of the course is followed by the **number of lessons** in the course and the **number of credits** it yields. Then comes mention of the **tuition fee** (here, \$15) and of any **special fee** which may be involved.

Last comes the **instructor's name**.

Are There Other Facts or Regulations concerning Correspondence Courses Which I Might Want to Know?

Credits: Most of the courses in this bulletin are listed for credit. This means credit towards a degree, subject, however, to the limitations noted below. The credits are **quarter credits**: three quarter credits equal two semester credits or hours. A few courses are listed for "Extension credit." This means that the credits earned in these courses cannot be applied toward a degree, but can be used to satisfy some requirements in the Extension Certificate programs. (See page 8.)

For graduation from high school—With the approval of the high school concerned, and subject to the regulations of your state department of education, certain correspondence courses may be used toward completion of the requirements for graduation from high school. Note, however, that the diploma is granted by the high school, not by the University. Correspondence courses which may be taken for high school credit are listed beginning page 54.

For entrance to the University—Admission to the University is gained by graduation and certification from high school or by entrance examination; the entrance examination tests your aptitude for college work, not your recollection of subjects taken in high school. Each college of the University has its own entrance requirements, and these requirements are explained in the *General Information Bulletin* which is available from the Office of Admissions and Records. This means that a student who has been graduated and certified by a high school may still lack one or more high school courses which are required for entrance to the particular college of the University he wants to enter. He may take these courses by correspondence study. Courses of this type are listed beginning on page 54.

Limitations: Only a limited amount of credit, earned by means of correspondence study can be applied toward a degree. No college at the University will grant a degree without at least one year (45 quarter credits) of residence study. Most correspondence study courses give credit that is ordinarily earned in the freshman and sophomore years.

Some colleges at the University have placed additional restrictions on the number of credits which may be earned toward a degree, as follows:

College of Science, Literature, and the Arts: Only 3 credits in the student's major sequence in courses numbered 50 or above.

School of Business Administration: Only 9 credits in courses numbered 50 or above.

Institute of Technology:

(1) For full credit: Draw. 1-2 Engineering Drawing, Eng. Comp. 4-5-6 Freshman Composition, Math. 11 College Algebra, Math. 12 Trigonometry, Math. 13 Analytical Geometry, Math. 24 Differential Calculus, Math. 25 Integral Calculus, Math. 26 Technical Mechanics: Statics, Math. 127 Technical Mechanics: Dynamics, Math. 128 Strength of Materials.

(2) As substitutions for corresponding required courses in Institute of Technology as indicated in class descriptions.

(3) As elective credits: Draw. 44 Freehand Lettering, Gen. Eng. 70 Slide Rule, Civ.Eng. 146 Concrete and Concrete Materials. But not more than 15 elective credits earned in technical or nontechnical correspondence courses will be accepted for a degree in the Institute of Technology.

Residence—Correspondence study does not count as “residence” study.

Graduate—Correspondence study does not count toward graduate degrees.

Degrees: A student who wishes to become a candidate for a degree must meet the admission requirements of the University and the entrance and degree requirements of the college in which the degree is sought. The advisers in the department will assist the student to determine his status with regard to these requirements.

Credit at other institutions: A student who expects to apply credits earned in correspondence at the University of Minnesota towards an educational program in another university or college should determine the acceptance of such credits before registering. A large number of institutions accept correspondence courses for credit from accredited universities and colleges, but the amount, or maximum hours accepted toward a degree, varies with each institution. Some colleges or college departments have special limitations on the transfer of credits earned through correspondence. You should check the credit policy of the institution from which you expect to receive transfer credit.

Examinations: To earn credit in a correspondence course the student must pass the final examination. This examination should be written in the department's offices in Nicholson Hall on the Minneapolis Campus of the University. Students who are unable to come to the campus for their examination may write it in the downtown Extension Division offices in Minneapolis, St. Paul, or Duluth, or elsewhere under the supervision of the local school superintendent or principal. There is no charge for the examination provided it is written during the life of the student's registration; if the registration (which is good for one year) has expired, the regular reinstatement fee of \$1 will be charged for the examination except for service personnel and veterans.

You must request all examinations, including the final examination; they are not automatically sent to you. Your final grade will be determined, for the most part, by your achievement on the final examination. You will find additional instructions in your study guide.

Grades: The grades A, B, C, and D indicate work of varying degree of merit, D being the lowest passing grade. The grade F, failure, indicates a deficiency so serious that the student must repeat the course to earn credit in it; nor may a student who receives a failure in a continuation course register for another part of such a course until the failure is made up.

Honor points—In correspondence courses, honor points are used only to ascertain whether a student has the C average required for all certificates; they are not used to reduce the number of credits required for a certificate. Correspondence students who are seeking degrees should con-

sult an officer in the college in which the degree is sought regarding the status of honor points in that college.

Reports of students' grades and credits are sent them by the university recorder and will not be furnished by the Correspondence Study Department except on request.

Maximum load: Correspondence students may not take more than two courses at the same time. It is strongly recommended that veterans enrolling under Public Law 346 register for only one course at a time.

Noncredit registration: A student who does not want to do all the required work of a course may register as a noncredit student by writing "Noncredit" in the Credits column of the registration form. Noncredit students pay the same fees as credit students but earn no credit.

Postage: The student prepays postage on all mail sent to the University; mail sent from the University to the student is prepaid by the Correspondence Study Department.

Refunds: A student who wishes to discontinue his correspondence course may receive a partial refund, provided he makes application within **three months** from the time of enrolment, and that such application is made before he has completed one half of the total number of lessons in the course. Of the student's tuition fee, provided he is eligible for a refund, **one fifth of the total cost of the course and seventy cents for each lesson serviced are nonrefundable.**

Special permission to register for a correspondence course is required by the following students:

- (1) Those who are carrying a full load of day classes.
- (2) Those who are carrying a full load of night classes.
- (3) Those who have been dropped for low scholarship.
- (4) Those who wish to take a correspondence course in order to make up a failure, or raise a previous grade.

Transfer may be made from one correspondence course to another within the limit of two years from the date of the original registration. The transfer fee is one dollar, together with the payment of seventy cents for each lesson already completed. If it has been more than a year since the registration was made, there will be an additional charge of one dollar for reinstatement. The remainder of the original fee paid will be credited toward the tuition fee of the new or substituted course. In case a transfer is recommended by the department, only a charge for the correction of the lessons will be made.

THE GUIDE TO CORRESPONDENCE STUDY

The Correspondence Study Department as a part of the General Extension Division is a member of the National University Extension Association. Among other activities, this association publishes the *Guide to Correspondence Study*. This bulletin is designed to give ready reference to correspondence courses offered by 53 colleges, universities, and comparable educational agencies. There is a nominal cost for this publication which can be secured from the Secretary of the Association, University of Indiana, Bloomington, Indiana.

SPECIAL INFORMATION FOR SERVICE PERSONNEL

Two types of correspondence courses are available to men and women of the armed forces.

Type 1—Most of the courses in this bulletin are available to service personnel through cooperation between the University of Minnesota and the United States Armed Forces Institute. Write to USAFI, Madison 3, Wisconsin, or to the Correspondence Study Department for information.

Type 2—Any course in this bulletin is available to service personnel who pay the full fee as listed in the description of each course. Register through the Correspondence Study Department.

EXTENSION CERTIFICATES

The General Extension Division awards certificates for the satisfactory completion of approved programs of study. The work may be done in evening classes, **correspondence study courses**, or both. Most day school or Summer Session credits from the University of Minnesota may be approved. Students may also transfer credits from other accredited institutions provided a minimum of 25 per cent of the credits required for the certificate is earned at the University of Minnesota. For advice or information on programs of study leading to certificates, including **permission for substitution and transfer of credits**, consult the Students' Work Committee. Certificates are awarded to students who complete with a C average any of the following programs of study:

LIBERAL EDUCATION CERTIFICATE

English requirement: Freshman Composition 4-5-6, or exemption.

Spread requirement: At least 6 credits in each of the following fields:

Humanities: English composition (beyond 4-5-6) or literature, fine arts, foreign languages, humanities, philosophy, speech

Sciences: astronomy, botany, chemistry, geology, mathematics, physics, psychology, zoology

Social Sciences: anthropology, economics, geography, history, political science, sociology

Concentration requirement: At least 12 credits in one subject, or in approved related subjects in addition to the 6 or 9 credits earned in that subject under the spread and English requirements above.

Electives: Additional courses approved by the Students' Work Committee to make a total of **45 credits** for the certificate.

BUSINESS ADMINISTRATION CERTIFICATES

Junior Certificate (45 credits)

Core requirement:

Bus. Engl. 1ex, or Composition 4, or exemption by examination

B.A. 51 Business Law

Econ. 5 Elements of Statistics

Econ. 6-7 Principles of Economics

Econ. 24-25-26 Elements and Principles of Accounting

Spread requirement: At least 3 credits in each of the following fields

- Business Administration: B.A. 89 Production Management
- Distribution: Advertising, Marketing and Merchandising, Traffic and Transportation
- Finance
- Labor and Personnel
- Business Law: B.A. 52, 53, or 56

Concentration requirement: Additional courses totaling at least 9 credits in one of the following fields, or approved combination thereof

- | | |
|-------------|-----------------------------|
| Accounting | Labor and Personnel |
| Advertising | Marketing and Merchandising |
| Economics | Statistics |
| Finance | Traffic and Transportation |
| or | |
| Insurance | |

Electives: Additional courses approved by the Students' Work Committee to make a total of 45 credits for the certificate

Senior Certificate (90 credits)

Core requirement:

- Bus. Engl. 1ex-2ex, or Composition 4-5-6, or exemption by examination
- B.A. 51 and either 52 or 53 Business Law
- B.A. 89 Production Management
- Econ. 3 Elements of Money and Banking
- Econ. 5 Elements of Statistics
- Econ. 6-7 Principles of Economics
- Econ. 24-25-26 Elements and Principles of Accounting
- Econ. 73 Labor Problems and Trade Unionism

Concentration requirement: At least 18 credits in one of the following fields, or approved combination thereof

- | | |
|-------------|-----------------------------|
| Accounting | Labor and Personnel |
| Advertising | Marketing and Merchandising |
| Economics | Statistics |
| Finance | Traffic and Transportation |
| or | |
| Insurance | |

Electives: Additional courses approved by the Students' Work Committee to make a total of 90 credits for the certificate

ENGINEERING CERTIFICATES

Junior Certificate (45 credits)

Core requirement:

- M.&M. 11 College Algebra
- M.&M. 12 Trigonometry
- M.&M. 13 Analytical Geometry
- M.&M. 24 Differential Calculus
- M.&M. 25 Integral Calculus
- M.&M. 26 Technical Mechanics: Statics
- D.&D.G. 1-2 Engineering Drawing

Electives: Additional courses approved by the Students' Work Committee to make a total of 45 credits for the certificate

Senior Certificate (90 credits)

Core requirement:

- M.&M. 11 College Algebra
- M.&M. 12 Trigonometry
- M.&M. 13 Analytical Geometry
- M.&M. 24 Differential Calculus
- M.&M. 25 Integral Calculus
- M.&M. 26 Technical Mechanics: Statics
- M.&M. 127 Technical Mechanics: Dynamics
- M.&M. 128 Strength of Materials
- D.&D.G. 1-2 Engineering Drawing

Concentration requirement: At least 30 credits in one of the following fields, or approved combination thereof

- | | |
|--------------------------|------------------------|
| Aeronautical Engineering | Electrical Engineering |
| Civil Engineering | Mechanical Engineering |

Electives: Additional courses approved by the Students' Work Committee to make a total of 90 credits for the certificate

INDUSTRIAL RELATIONS CERTIFICATE**Industrial Relations Certificate (45 credits)**

Core requirement: (37 credits)

- Econ. 6-7 Principles of Economics
- Econ. 73 Labor Problems and Trade Unionism
- Econ. 162 Labor and Social Movements
- Econ. 164 Labor Legislation and Social Insurance
- B.A. 167 Introduction to Industrial Relations
- Survey of Current Problems in Industrial Relations
- Psy. 1-2 General Psychology
- Psy. 4-5 Introductory Laboratory Psychology
- Psy. 122-123 Vocational and Personnel Psychology

Electives: An additional 9 credits selected from the following courses

- | | |
|------------------------------------|---|
| B.A. 86 Office Management | Advanced Supervision |
| B.A. 89 Production Management | Work Simplification |
| Psy. 119 Psychology of Personality | Work Measurement and Production Standards |
| Psy. 144-145 Abnormal Psychology | |
| Soc. 100 Social Psychology | Elements of Union Administration |
| Wage and Salary Administration | Plant Layout |
| Elements of Supervision | |

Special requirement: To qualify for the Certificate award upon completion of the core and elective requirements a student must pass an Industrial Relations Classification and Placement Test administered by the Industrial Relations Center.

COLLEGE COURSES§

(High school courses begin on page 54.)

AGRICULTURE*

Rex W. Cox, Ph.D., Associate Professor of Agricultural Economics
Mykola H. Haydak, Ph.D., Associate Professor of Entomology and Economic Zoology
Horace L. Thomas, Ph.D., Associate Professor of Agronomy and Plant Genetics
Truman R. Nodland, Ph.D., Assistant Professor of Agricultural Economics
Otto W. Swenson, Superintendent of Farm and Grounds and Assistant Professor
J. Grant Dent, Instructor in Agricultural Engineering

Ag. 1 General Farm Crops. In essence a survey course; it touches all the important phases of agronomy and gives specific practical information about many of them. This gives the student the basis for a more detailed study of certain crops or practices which are of particular importance to him. Although most illustrations are drawn from Minnesota agriculture, the course is broad in scope and will be useful to students anywhere in north central United States, and to a lesser extent, anywhere in the world. The course offers carefully selected reading assignments and variability in the required written reports. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Thomas

A2 Forage Crops. A course designed to give basic knowledge of the forage crops plus general information as to what crops to grow and how best to handle them to obtain the greatest returns. Some of the subjects taken up include seeding practices, grasses, clovers, alfalfa, pastures, crop rotation, hay making, silage, soybeans, and other miscellaneous forages. No prerequisite and no credit towards a degree.

16 lessons, 3 credits in School of Agriculture, \$15, Mr. Swenson

A4 Beekeeping. The aim of this course is to present information on the subject of beekeeping in such a way that those who have had no experience with bees can start with one or more colonies in the spring and carry on with them successfully; also, to present enough fundamental information on bees and modern beekeeping practices to enable those who have had a few years of experience to add to their knowledge and improve their methods. Some of the more important topics to be considered in the course are the study of the honey bee colony and of the individual bee, fundamentals of bee behavior, the value of bees in pollination, colony development, beekeeping equipment and practices, swarm control, package bees, supersedure, increase, queen rearing, apiary management, bee diseases and enemies and their control, methods of winter-

* The courses are offered through the University Department of Agriculture in cooperation with the Agricultural Short Courses.

§ The letter "c" after the number of a course means that there is no parallel campus course or that the correspondence course is a material modification of the campus course for extension purposes.

ing, preparation of honey and wax for market. No prerequisite, and no credit towards a degree.

16 lessons, 3 credits in School of Agriculture, \$15, Mr. Haydak

Ag. Econ. 80 Farm Records and Accounts. Forms and procedure for recording inventories, cash receipts and expenses, crop acreages and yields, feed consumed by livestock, family living secured from the farm, and other information concerning the farm business. Calculation of measures of farm earnings. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Nodland

Ag. Econ. 140c Grain Marketing. A study of the more important aspects of grain marketing including country elevator operation, grading of grain, grain exchanges, cash and future trading, hedging and speculation, activities of commission merchants, terminal elevator operators and processors of grain, market news, and prices of grains. No prerequisite.

16 lessons, 3 Extension credits, Mr. Cox

Registrations accepted after May 1, 1951.

Agricultural Education (Rural Education). See page 21.

Home Economics (Textiles). See page 13.

Horticulture (Landscaping). See page 40.

Parliamentary Law. See page 44.

Ag. Eng. 42 Art Metal Work. A course designed for persons interested in creating articles of permanent beauty and value from metals, including copper, pewter, brass, steel, aluminum, nickel silver and sterling silver. Forming plates, bowls, and trays; use of jewelers' saw in pierced work; etching; soldering; making candlesticks, book ends, desk sets, lamps, bracelets. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Dent

ANTHROPOLOGY

Robert F. Spencer, Ph.D., Assistant Professor of Anthropology

Harold P. Winchester, B.A., Instructor in Anthropology

40 Introduction to Anthropology. Characteristics of human races; fossil men; prehistory. The life of primitive peoples; economic, religious, social activities, and other phases of culture. The bearings of anthropology on present-day thought and problems. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Winchester

80 The American Indian. A survey of the native cultures of the Americas. Descriptive accounts of the physical types, languages, prehistory, and cultures of North, Central, and South America. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Spencer

ART

Clifton Gayne, Jr., Ph.D., Professor of Art and Head, Department of Art Education

Leah M. Lewis, B.S., Assistant Professor of Art

Gladys Babcock, M.A., Instructor in Textiles

Mildred M. Page, M.Ed., Instructor in Art Education

Lucile S. Robinson, B.A., Instructor in Textile Crafts

Art 4c Fundamental Experiences in Design. The fundamental principles applied to a series of interesting and practical problems using a variety of techniques; a basic course that is useful in public school teaching and as a foundation for other art courses. No prerequisite.

16 lessons, 3 credits, \$15, Mrs. Lewis

Art 43c General Handcrafts—Textile Crafts. A practical course in needle work and other textile crafts suitable for use in homes, schools, camps, playgrounds, social service, and for those interested in adult education. No prerequisite.

16 lessons, 3 credits, \$15, Mrs. Robinson

Art 83c Interior Design (Interior Decoration). A study of traditional and modern furniture and how to combine various styles in today's homes. Additional subjects include floor treatment, coverings, wall treatment in its many phases, and how to build color schemes. Of interest to teachers, homemakers, and decorators. No prerequisite.

16 lessons, 3 credits, \$15, Mrs. Lewis

Art Ed. 19c Art Appreciation in Education. An introductory survey of art to provide a background for personal growth and for effective cooperation in modern educational programs. The role of the artist, his ideas, materials, and technics will be examined in terms of his contributions to enriched living. Painting, sculpture, architecture, city planning, personal appearance, and industrial design are some of the specific areas studied in relation to current personal and social problems. Recommended for elementary school teachers but of general interest. Not open for credit to art majors or those who have completed Art Ed. 19. No prerequisite.

21 lessons, 4 credits, \$20 plus \$1.25 materials fee, Mr. Gayne and Miss Page

Home Ec. 2c Introduction to Textiles. A course for consumers and people in the field of merchandising. A study of textiles commonly used in clothing and home furnishings including fiber identification and properties, yarn and fabric construction, fabric finishing, determination of fabric quality in relation to use, and care of fabrics. No prerequisites.

16 lessons, 3 credits, \$15 plus \$1.50 for materials, Miss Babcock

Engineering Drawing. See page 24.

Art Metal. See page 12.

ASTRONOMY

Willem J. Luyten, Ph.D., Professor of Astronomy and Chairman, Department of Astronomy

11 Descriptive Astronomy. A descriptive course designed to give accurate general information regarding the solar system and the stellar

universe. It emphasizes the basic facts of the physical universe, rather than the technical details of the work of a professional astronomer. A small telescope or even a field glass will be helpful but not essential. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Luyten

BUSINESS ADMINISTRATION

Helen Canoyer, Ph.D., Professor of Economics and Marketing

Carl L. Nelson, Ph.D., C.P.A., Professor of Accounting

J. Warren Stehman, Ph.D., Professor of Economics and Finance

Arthur M. Borak, Ph.D., Associate Professor of Economics

Ernestine C. Donaldson, M.A., Associate Professor of Business Administration

Herbert G. Heneman, Jr., Ph.D., Associate Professor of Economics

Edwin H. Lewis, Ph.D., Associate Professor of Economics and Marketing

Richard A. Graves, M.A., Assistant Professor of Economics and Insurance

Reuel I. Lund, Ph.D., C.P.A., Assistant Professor of Accounting

Donald H. Bruer, LL.B., Instructor in Business Law

Clifford I. Haga, B.A., Instructor in English

Howard Hovda, M.S., Instructor in Economics

Harold P. Nielson, M.A., Instructor in Business Administration

Elvin L. Peterson, B.B.A., Instructor in Economics

(For other business courses see page 19, Economics. For Salesmanship see page 50.)

N.B.—See page 5 for limitation on amount of credit earnable by correspondence courses for B.B.A. degree.

1c Business English. A practical course for people in business or those preparing to enter it. The ways of developing effective letter-writing habits are analyzed and presented in a study of diction, grammar, and the mechanics of letter forms. No prerequisite.

16 lessons, 3 Extension credits, \$15, Mr. Haga

51 Business Law—Contracts. A course dealing with the basic law of contracts, the formation, operation, effect, and discharge of contracts. Inasmuch as a knowledge of the general rules of contract law is fundamental to all work in business law, this course must precede Business Law 52, 53 and 56. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Bruer

52 Business Law—Agency, Partnerships, and Corporations. The law of agency and a consideration of problems of partnerships and corporations, including business associations. The course includes a study of the nature, creation, and terms of relationships, and rights and liabilities of the parties when doing business through agents, partnerships, and corporations. Prerequisite: Business Law 51.

16 lessons, 3 credits, \$15, Mr. Bruer

53 Business Law—Sales and Negotiable Instruments. Law of sales of goods under the Uniform Sales Act and law of commercial paper under the Uniform Negotiable Instruments Law. Includes a study of negotiable

notes, checks, drafts, etc., and rights of parties thereto. Prerequisite: Business Law 51.

16 lessons, 3 credits, \$15, Mr. Bruer

56 Business Law—Property Rights and Obligations. Nature and classification of real and personal property; deeds and conveyances; landlord and tenant; recording and abstracting; Torrens titles; liens and mortgages; wills, probating of estates, and duties of administrators and executors. Prerequisite: Business Law 51.

16 lessons, 3 credits, \$15, Mr. Bruer

58 Elements of Public Finance. Government expenditures, revenues, and debts. This includes a study of the nature of public expenditures, various kinds of non-tax public revenues, various forms of taxation, shifting and incidence of taxation, budgetary and legislative control, and fiscal reforms. Prerequisite: Principles of Economics I.

16 lessons, 3 credits, \$15, Mr. Borak

64c Operation of a Small Business. A study of the practical problems of operating a small business and of the latest principles and practices used in their solution. Covers all phases of organization and management including: advertising, layout, financing, location, buying, pricing, personnel. Problems illustrated by actual cases. Emphasis on retailing. No prerequisite.

16 lessons, 3 credits in General College, \$15, Mr. Hovda

66 Cost Accounting. The uses of cost information in modern industry, the accounting mechanism for costs, types of cost systems, the definition of cost terms; the use of the factory ledger; the accounting for materials, their purchase, storage, use, the stores ledger, and the calculation of materials costs; the accounting for labor with particular reference to applying labor costs to production; the accumulation and analysis of overhead and its application to product; cost reports and statements for the management. Prerequisite: Economics 23 or 26 or approximate equivalent.

16 lessons, 3 credits, \$15, Mr. Lund

69 Retail Store Management. A course in retail merchandising and store management. Lessons consist of discussions of actual problems encountered in retail stores, together with the methods of studying and solving the problems. Prerequisite: Principles of Economics I and II, or equivalent; recommended to experienced businessmen to whom it is open without prerequisite, although credit cannot be used toward a degree. (Not offered, 1950-51.)

16 lessons, 3 credits, \$15, Miss Canoyer

76 Credits and Collections. The nature and types of credit instruments and agencies; qualifications and work of the credit manager; valuation and use of credit reports and financial statements; collection methods and correspondence; bankruptcy and adjustments; credit limits and control. Prerequisite: Principles of Economics I and II.

16 lessons, 3 credits, \$15, Mr. Nielsen

86 Office Organization and Management. The office as a producing unit; office organization, equipment, and layout; development of office standards and routines; relation of the office to operating divisions; sci-

entific management of office work. Prerequisite: Principles of Economics I and II.

16 lessons, 3 credits, \$15, Miss Donaldson

89 Production Management. A survey course in the techniques of modern management of production. The basic principles of the techniques of scientific management are studied with particular emphasis on the need for the scientific method of approach to the solution of management problems. The following topics are considered: organization, the physical plant, product development, material control, quantity control, quality control, and production control. Prerequisite: Economics 6 and 7. Recommended to businessmen to whom it is open without prerequisites.

16 lessons, 3 credits, \$15, Mr. Peterson

115 Life Insurance. Nature, uses, and kinds of life insurance, and the fundamental principles involved in the measurement and underwriting of life risks. Prerequisite: Principles of Economics I and II.

16 lessons, 3 credits, \$15, Mr. Graves

116 Fire and Marine Insurance. Nature of fire and marine risks and of the types of underwriters, forms of insurance contracts, analysis of policy provisions, and principles and methods of rate making. Prerequisite: Principles of Economics I and II.

16 lessons, 3 credits, \$15, Mr. Graves

117 Casualty Insurance. Types of coverage which have been developed in this field; analysis of policy provisions and treatment of the important factors involved in the making of rates for each of these types of insurance. Prerequisite: Principles of Economics I and II.

16 lessons, 3 credits, \$15, Mr. Graves

118 Auditing and Public Accounting. The purposes and principles of auditing. Auditing "from the records" and investigations by independent, internal, and governmental auditors. Accounting principles, the S.E.C. and the verification and certification of published statements by public accountants. Specific procedures and particular working papers are interrelated by the audit of a laboratory set calling for actual examination of records and accounts, the preparation of complete working papers, and an audit report. Prerequisite: Economics 23 or 26 or approximate equivalent.

21 lessons, 4 credits, \$20, Mr. Lund

134 Income Tax Accounting. The application of the federal income tax law to individuals and corporations. The course begins with a consideration of what types of income are taxable and which are not. Consideration is then given to items which can be deducted from gross income. Exemptions and tax rates are then studied as the final step in calculation of tax. Practice is given in the preparation of returns. Prerequisite: Some knowledge of elementary accounting.

16 lessons, 3 credits, \$15, Mr. Nelson

146 Investments. Study of the principles of investment and their application to actual cases. Lessons developed out of concrete examples to develop critical appraisal of specific securities and add to working knowledge of investment issues. Principal emphasis on the most important

groups of securities— railroad, industrial, public utility, and governmental issues. Prerequisites: Elements of Money and Banking and Corporation Finance; recommended to businessmen to whom it is open without prerequisite.

16 lessons, 3 credits, \$15, Mr. Stehman

150 Intermediate Accounting. Tangible fixed assets (problems of valuation, retirement, and appraisal); intangibles; investments; liabilities; comparative statements; vertical and horizontal analysis; significance of per cents and ratios; analysis of working capital; age of accounts receivable; book value per share of stock; causes of change in gross profit; changes in manufacturing costs; distortion in ratios; profit and loss analysis; a statement of variation in net profit; causes of variations in profits; changes in quantity volume; the breakeven point; use of breakeven computations in management; statement of application of funds; funds provided by profits; other sources of funds; and analysis of fixed asset and reserve accounts. Prerequisite for credit: Economics 23 or 26 or equivalent.

16 lessons, 3 credits, \$15, Mr. Lund

155 Corporation Finance. A study of the organization and financial management of corporations, with reference to types of securities, conditions under which they should be issued, and facilities for marketing them. Prerequisite: Principles of Economics I and II, and Elements of Money and Banking.

16 lessons, 3 credits, \$15, Mr. Stehman

167 Introduction to Industrial Relations. Evaluation of managerial policies and devices designed to secure the cooperation and efficient participation of employees in business, industry, and government. Attention is directed especially to the determination of labor needs, job analysis and classification, methods of recruiting workers, selective devices, training and safety programs, service rating, employment stabilization, collective bargaining, and compensation. Prerequisite: Economics 161 or registration in this course.

16 lessons, 3 credits, \$15, Mr. Heneman

188 Advertising. A survey course of advertising principles and techniques as related to the product and its market including the uses of advertising media: newspapers, magazines, direct mail, display, radio and television, and basic layout and copy techniques used in the construction of advertisements. Prerequisites: Students who are candidates for a degree at the University of Minnesota are required to have B.A. 77, Survey of Marketing, and Psy. 56, Psychology of Advertising. Other students who have had business experience may have these prerequisites waived upon request.

16 lessons, 3 credits, \$15, Mr. Lewis

CHILD WELFARE

Pearl T. Cummings, B.S., Assistant Professor and Extension Worker,
Institute of Child Welfare

Mildred C. Templin, Ph.D., Assistant Professor of Child Welfare

1c Child Care and Training. Physical growth and care of young children. Mental development, personality, and behavior. The manage-

ment of young children. Establishing desirable habits. Play, toys, games, stories, and music. Intended primarily for the parents of young children. No prerequisite. Send registrations directly to the Institute of Child Welfare, University of Minnesota.

16 lessons, no credit, \$1, Mrs. Cummings

2c The Older Child and Adolescent. Physical, intellectual, emotional, personality, and social development of older children and adolescents. The guidance, vocational and educational interests and the relations of sex, recreation and friends to the process of growing up are discussed. No prerequisite. Send registrations directly to the Institute of Child Welfare, University of Minnesota.

16 lessons, no credit, \$1, Mrs. Cummings

40 Child Training. A brief survey of physical and mental development is followed by a discussion of the training of young children. Behavior problems in their various aspects, and the techniques of good and bad management will be considered. Prerequisite: Psychology 1 and 2 or equivalent.

16 lessons, 3 credits, \$15, Miss Templin

50c The Guidance of Children's Interests. Furthering the child's development by directing his natural activities and interests. Discussion of stories, music, art, and dramatics, as well as the use of tools, toys, and a variety of occupational materials. The value of play and activities initiated and carried out by the children. Prerequisite: Psychology 1 and 2 or equivalent.

16 lessons, 3 credits, \$15, Miss Templin

80 Child Psychology. A survey of child psychology from infancy to adolescence. Development of motor skills, language, intelligence, emotional behavior, personality, social behavior, and character. Learning and adjustment. Of interest to the teacher, the general student, and parents. Prerequisite: Psychology 1 and 2 or equivalent.

16 lessons, 3 credits, \$15, Miss Templin

82 Later Childhood and Adolescence. What it means to grow up; the effect of physical, mental, and emotional growth on the developing personality; guidance of youth's interests and social life—sex, recreation, friends, and vocation. Not open to those who have completed Psychology of Adolescence in the College of Education. Prerequisite: Psychology 1 and 2 or equivalent.

16 lessons, 3 credits, \$15, Miss Templin

CHINESE

Chang-Tsing Yang, Ph.D., Instructor in Chinese

1c Beginning Chinese. This course aims to provide a practical familiarity with the distinguishing features of the Chinese language so that the student may learn to read modern Chinese literature and easy Chinese newspaper articles; to speak Mandarin, the Chinese national language; to write Chinese characters; to compose simple essays and

friendly letters; to translate from Chinese into English and vice versa. A vocabulary of about one thousand of the most useful characters and compound words will be acquired. No prerequisite.

16 lessons, 3 Extension credits, \$15, Mr. Yang

ECONOMICS

Herbert G. Heneman, Jr., Ph.D., Associate Professor of Economics
 Richard A. Graves, M.A., Assistant Professor of Economics and Insurance
 Reuel I. Lund, Ph.D., C.P.A., Assistant Professor of Accounting
 Harland G. Fox, B.A., Research Assistant in Industrial Relations

3 Elements of Money and Banking. An introduction to the study of modern financial institutions; the nature and functions of money, its types and methods of control; recent efforts to change and regulate the value of money; chief emphasis upon the American financial system, including the mechanism of the money market, investment banking, the functions of trust companies, savings institutions and commercial banks, the federal reserve system including recent modifications, and agricultural credit institutions. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Graves

5 Elements of Economic Statistics. A course in the elementary tools for the collection, analysis, and interpretation of statistical data in economics and business; the collection of material by mail, by interviewer, or from published sources; the use of tables, charts, and averages in economic analysis; the measurement of variation and association in statistical data, particularly with relation to the errors of sampling; the construction and use of index numbers in measuring cost of living, price levels, and production. The objective throughout is a reasonable familiarity with the basis for widely used statistical techniques. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Graves

†6 Principles of Economics I. A course dealing with the underlying principles affecting the production and exchange of goods and services. Organization and regulation of production; the determination of costs and prices under conditions of competition and monopoly and public control of industry. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Graves

†7 Principles of Economics II. A continuation of Principles of Economics I. Financial organization of society; the distribution of wealth and income; the economic significance of labor organization; labor legislation; socialism; taxation; foreign trade. Prerequisite: Principles of Economics I.

27 lessons, 5 credits, \$25, Mr. Graves

22-23 Principles of Accounting. The equivalent of these two courses is now being offered in the Economics 24-25-26 sequence. Economics 23 is, however, available for students who have had Economics 22.

21 lessons, 4 credits, \$20, Mr. Lund

† Both Econ. 6 and 7 required for credit

24 Elements of Accounting. The form and content of financial statements; ledgers; debit and credit; journals; control accounts; special books; the trial balance; adjusting and closing entries; the work sheet; and the preparation of financial statements. Each lesson will include a reading assignment in a text and a number of problems to work. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Lund

25 Principles of Accounting I. A large part of the course has to do with corporation accounting. Formation of a corporation; types of stock; opening entries; donated and other treasury stock; surplus; dividends; reserves; surplus statement; valuation of stocks and bonds. The remainder of the lessons will consider peculiarities of accounting for partnership. Prerequisite: Elements of Accounting or equivalent.

16 lessons, 3 credits, \$15, Mr. Lund

26 Principles of Accounting II. Accounting for manufacturing inventory methods; the job order method; process costs; departmental accounting; branch accounting; consolidated statements; funds statements; and an analysis and interpretation of financial statements. Each lesson includes problems which are to be worked and submitted by the student. A longer practice set is also assigned towards the end of the course. Prerequisite: Economics 25, Principles of Accounting I or equivalent.

16 lessons, 3 credits, \$15, Mr. Lund

50 Insurance Principles. Deals with the nature and measurement of risk and with the development and uses of personal, property, and liability insurance. Forms of protection; policy contracts; social insurance and government regulation. Special emphasis on property insurance. Prerequisite: Principles of Economics I-II.

16 lessons, 3 credits, \$15, Mr. Graves

73 Manpower Economics and Problems. Labor problems are viewed as part of the labor market situation. Special attention is given to wage determination and the volume of employment, as well as unemployment compensation and old age pensions. Competing forms of labor unionism, aims, policies, and methods of promoting their ends. Labor legislation relating to injunctions, yellow dog contracts, strikes, picketing. Recent attempts by government to control unions, and other topics. Prerequisite: Principles of Economics I-II or equivalent.

16 lessons, 3 credits, \$15, Mr. Fox

164 Labor Legislation and Social Insurance. A course dealing with selected aspects of labor legislation including background of modern labor legislation; minimum wage laws, hours legislation; labor injunctions; accident, health, old age, and unemployment compensation; state labor laws; labor arbitration. Discussion of Taft-Hartley Act, Railway Labor Act, National Labor Relations Act, Fair Labor Standards Act, Federal Social Security Act and other statutes and administrative rulings. Prerequisite: Economics 161.

16 lessons, 3 credits, \$15, Mr. Heneman

Bookkeeping. See page 54.

EDUCATION

Marcia Edwards, Ph.D., Assistant Dean, College of Education
 George H. McCune, Ph.D., Professor of Social Studies
 Julius M. Nolte, B.A., LL.B., Dean of University Extension and Professor
 Robert H. Beck, Ph.D., Associate Professor of General Education
 Miles E. Cary, Ph.D., Associate Professor of Education
 Harry W. Kitts, Ph.D., Associate Professor of Agricultural Education
 Donovan Johnson, Ph.D., Assistant Professor of Education
 Gordon Mork, M.A., Lecturer in Education
 Edward Dvorak, M.Ed., School Health Consultant, State Board of Health
 and Special Instructor in Education

4c Introduction to Philosophy of Education. A critical study of the crucial issues of contemporary education in the United States. An effort will be made to relate this study to the problems and issues that teachers are now facing in their day-by-day work with children. The central objective of this course is to help teachers to clarify their thinking in respect to role of the teacher and public school in present-day America. No prerequisite.

21 lessons, 4 credits, \$20, Mr. Cary

Ag.Ed. 54 Rural Education and Community Leadership. The organization and administration of a progressive program of rural education. Problems involving the school plant, the curriculum, the teachers, and guidance for rural youth. The school as a community center; organizing educational, social, and recreational activities. The objectives, organization, and operation of youth programs, clubs, fairs, festivals, and the many other desirable educative features of rural community life. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Kitts

58 Psychology of Adolescence. A study of changes characterizing the transition from childhood to adult life. Discussion of physical, mental, social, and emotional development during the adolescent years, with emphasis on the relation of this development to the problems of adolescents in our society. The influence of the secondary schools on good adjustment of adolescents, and implications for guidance during the period of secondary education. This course is listed in the *Bulletin of the College of Education* as Ed. Psy. 158; it is not open to those who have completed Child Welfare 82 or Child Welfare 132. Prerequisite: Ed. 55B or equivalent.

16 lessons, 3 credits, \$15, Miss Edwards

Registrations accepted after May 1, 1951.

60 Introduction to Measurement and Statistics. A study of elementary statistical methods and their application to educational problems. The commonly used statistical terms and methods such as mean, median, mode, percentiles, graphs, standard deviation, correlation, standard scores, test analysis, and sampling theory are considered. An attempt is made to give the student some understanding of these terms, practice problems with educational data, and applications and interpretations of statistics. Emphasis is placed on the intelligent interpretation of statistical methods so that the student may plan studies and interpret results correctly.

16 lessons, 3 credits, \$15, Mr. Johnson

65 Teaching of Science in the Elementary Schools. This course is designed to acquaint the elementary school teacher with objectives, methods and materials of importance in the teaching of science to children. Special attention is given to developing understanding of science concepts and scientific method among children. Those phases of science content of importance in elementary education are identified and special attention is given to their explanation. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Mork

73 Educational Sociology. General sociological principles and their application to the schools; the study of the community and the adjustment of the teacher to varying types of communities; factors in the development of personality and the relation of personality to the larger social group; a systematic survey of educative aspects of the home, church, recreation, industry, and community, as well as of the school; the problems of the place of education in social progress and the varying viewpoints. No prerequisite.

16 lessons, 3 credits, \$15, Mr. McCune

77 Conflicting Issues in Modern Education. The principal aim of the course is to answer the following: What are the outstanding points of view in education today? Such practical questions as discipline, freedom, indoctrination, teacher-pupil relations, progressive methods, will be treated as they relate to underlying theory; but the central objective will be to appreciate the crucial agreements and differences among leading thinkers in contemporary education. This course may be substituted for H.Ed. 76 or 176 in undergraduate curricula. Not open to students who have taken Ed. 4c, Hist.Ed. 76, or Hist.Ed. 176. Prerequisite: 6 hours in psychology.

16 lessons, 3 credits, \$15, Mr. Beck

94 Adult Education. This course is a survey of the field of adult education. It provides an overview of history, purposes, and trends; agencies and areas; clientele and personnel, techniques, and materials. It is intended for persons who are now or expect to be employed in the field and for students of education who want their training to include a knowledge of the philosophy, organization, and operation of adult education. The course may be substituted for Ed.C.I. 104 in undergraduate curricula. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Nolte

129 Principles and Problems of Teaching Social Hygiene. Prepared by Division of Public Health Education. A course for school administrators, teachers, youth recreational leaders, and social welfare workers. Includes the teaching of human reproduction, physical and emotional changes in adolescence, boy-girl relationships, choosing a mate, preparation for marriage, and relationships between members of the family. Deals with special problems of teaching which arise when matters pertaining to sex are involved, with methods of adapting the teaching to different grade levels, with ways of incorporating these studies into various courses in the curriculum and with the use of different kinds of

visual aids. This course may not be counted as a methods course for certification purposes. Prerequisite: 6 credits in the College of Education.

16 lessons, 3 credits, \$15, Mr. Dvorak

ENGINEERING

The Institute of Technology embraces the College of Engineering, the School of Architecture, the School of Chemistry, and the School of Mines and Metallurgy. See page 5 for limitation on amount of credit earnable by correspondence courses for Institute of Technology degrees.

Axel B. Algren, M.S.(M.E.), Professor of Mechanical Engineering
George C. Priester, Ph.D., Professor and Head of Mathematics and Mechanics

Robert Edward Summers, M.S.(M.E.), Dean of Admissions and Records and Professor

Miles S. Kersten, Ph.D., Associate Professor of Civil Engineering

Orrin W. Potter, M.S., Associate Professor of Drawing and Descriptive Geometry

Theodor W. Thomas, M.S.(C.E.), Associate Professor of Civil Engineering

Paul A. Cartwright, M.S., Assistant Professor of Electrical Engineering

Immanuel C. Fischer, M.S., Assistant Professor of Engineering

John L. Imhoff, M.S.(M.E.), Assistant Professor of Mechanical Engineering

Mayer M. Krupp, B.M.E., Instructor in Mechanical Engineering

Ellis Peilen, B.S.(Aero.E.), Instructor in Engineering

AERONAUTICAL ENGINEERING

1c Elementary Aeronautics. This course offers the basic principles of aviation in an elementary way. History of aviation; the airplane and its parts; principles of aerodynamics; theory of flight; airfoils, slots, and flaps, aerodynamic resistance; stability and control; aircraft engine operation; propellers; flight maneuvers; aircraft construction; seaplanes and flying boats; military and commercial aircraft applications; radio; accessories; instruments. No prerequisite is required although a knowledge of high school algebra will be helpful. (May be substituted for Aero.Eng I. 3 credits in Institute of Technology.)

16 lessons, 3 Extension credits, \$15, Mr. Peilen

CIVIL ENGINEERING

54c Soils Engineering. A course intended for engineers and students who wish to become familiar with the basic principles of soil behavior, the terminology, the types of tests, and the application to practical problems. Origin and development of soils; their physical characteristics; and procedure of tests for their identification and suitability for use. Soil survey methods; field density tests; design of graded mixtures, soil stabilization, and theory of flexible base design. Prerequisite: One year of college mathematics desirable; consult instructor.

16 lessons, 3 Extension credits, \$15, Mr. Kersten

146 Concrete and Concrete Materials. This includes a study of the materials from which concrete is made, methods of designing a concrete mixture, the principles of air-entrained concrete, methods of measuring and controlling the air content, the chemical constitution of cement,

properties of concrete, the practical aspects of proportioning, mixing, placing, and curing concrete and other special related topics. Prerequisite: Knowledge of elementary algebra, physics, and chemistry. If credit is desired, prerequisite is Mathematics and Mechanics 128 or consent of instructor.

16 lessons, 3 credits, \$15, Mr. Thomas

DRAWING

1 Engineering Drawing. Elements of drafting including methods of representation, geometry, lettering, sketching, dimensioning, and working drawings. Prerequisite: Solid Geometry.

16 lessons, 3 credits, \$15, Mr. Potter

2 Engineering Drawing. Sections, auxiliary views, conventions, standards, tolerance dimensioning, working drawings, tracing. Prerequisite: Drawing 1.

16 lessons, 3 credits, \$15, Mr. Potter

4 Freehand Lettering. Practice in freehand commercial Gothic lettering, as used by draftsmen and engineers and in offices, stores, hospitals, libraries, schools, etc. No prerequisite.

6 lessons, 1 credit, \$5, Mr. Potter

ELECTRICAL ENGINEERING

1c Elements of Electric Circuits. Fundamental laws of direct-current circuits, the magnetic field and magnetic properties of iron and steel, induced and generated electromotive forces, electric fields, storage batteries. Fundamental laws of AC circuits, complex representation of AC quantities, series and parallel AC circuits, polyphase AC circuits, power measurements in AC circuits. No prerequisite.

16 lessons, 3 Extension credits, \$15, Mr. Cartwright

2c Elements of Electronics. Electronic emission, conduction through vacuums and gases; characteristics of vacuum tubes, of gas and vapor tubes, and of mercury pool tubes, amplifier circuits, trigger circuits, oscilloscopes, and control circuits; application of electronic devices to industry; electronic power devices. Prerequisite: Course 1c or equivalent.

16 lessons, 3 Extension credits, \$15, Mr. Cartwright

3c Elements of Electric Machinery. Theory of direct-current and alternating-current machinery. Study of operating characteristics. Elementary control equipment and maintenance. Prerequisite: Course 1c or equivalent.

16 lessons, 3 Extension credits, \$15, Mr. Cartwright

GENERAL ENGINEERING

70 Slide Rule. Practical course for engineers and office workers. Position of decimal point in computations stressed. No prerequisite.

6 lessons, 1 credit, \$5, Mr. Potter

MATHEMATICS AND MECHANICS

For additional credit courses in mathematics, see page 42.

1c and 3c Basic Mathematics. The two units in Basic Mathematics listed below are offered under the course names Basic Mathematics Review I and Basic Mathematics Review II. These courses may be taken for review of high school mathematics through trigonometry, or they

may be used as beginning courses in mathematics. They have been planned with several objectives in view: (1) To provide some appreciation and application of mathematics for those who are not planning to study more advanced work in mathematics, particularly courses above the high school level. (2) To provide a thorough review for students who find that they have forgotten much of the basic mathematics of high school level. (3) To provide a basic background for students planning to pursue more advanced courses in mathematics. There is no prerequisite for the first unit of these courses, except that it is expected that the student has a knowledge of grade school arithmetic.

1c Basic Mathematics Review I. A thorough review of grade school arithmetic; square and cube root. A good foundation in elementary algebra; the fundamental operations involving positive and negative numbers; fractions; the solution of simple equations and fractional equations; exponents; symbols of grouping; special products and factoring; and simplification of fractional expressions. No prerequisite.

16 lessons, 3 Extension credits, \$15, Mr. Fischer

3c Basic Mathematics Review II. This course covers the material of the second semester of high school algebra and the numerical part (called mensuration) of plane and solid geometry, plus numerical trigonometry and logarithms. In algebra: simultaneous linear equations; exponents and radicals; solution of quadratic equations, irrational equations; ratio, proportion variation; graphical representation of statistical data and of equations; and the use of formulas. In geometry: formulas from plane and solid geometry and how to apply them. In trigonometry: logarithms and how to use them; the trigonometric functions; and solution of right and oblique triangles. Prerequisite: The equivalent of Basic Mathematics Review I.

16 lessons, 3 Extension credits, \$15, Mr. Fischer

2c Elementary Mechanics. Short practical course in elementary mechanics for those who have not had calculus. Numerical and simple graphical calculations of the action of forces on machines. Components of forces; analysis of stresses in simple structure; centroids and moments of inertia of plane areas. Prerequisite: Basic Mathematics or equivalent.

16 lessons, 3 Extension credits, \$15, Mr. Priester

9c Higher Algebra. Review of elementary algebra, linear equations, determinants, ratio and proportion, variation, quadratic equations, graphs, progressions, binomial theorem. Prerequisite: 1 year of elementary algebra.

20 lessons, 4 Extension credits or $\frac{1}{2}$ entrance unit, \$19.50, Mr. Priester

10c Solid Geometry. Standard theorems and exercises. Practice in special proofs and original exercises to develop imagination and initiative. Prerequisite: Plane Geometry A-B or 1 year of high school plane geometry.

20 lessons, 4 Extension credits or $\frac{1}{2}$ entrance unit, \$19.50, Mr. Fischer

Note—Courses 9c and 10c meet the entrance requirement in mathematics of the Institute of Technology.

11 College Algebra. Theory of quadratic equations, interpretation of complex results, graphical representation, indeterminate equations, ratio and proportion, variation, progressions, series, undetermined coefficients, binomial theorem, logarithms, theory of equations, Horner's method. Prerequisite: Course 9c.

27 lessons, 5 credits, \$25, Mr. Priester

12 Trigonometry. Computation by logarithms. Trigonometric functions, plane right triangles, reduction formulas, fundamental relations, addition formulas, double angles, half angles, identities and equations, inverse functions, oblique triangles, de Moivre's theorem, spherical right triangles. Prerequisite: Course 11.

27 lessons, 5 credits, \$25, Mr. Fischer

13 Analytic Geometry—Plane and Solid. Coordinate systems, locus and equation, straight line, circle, parabola, ellipse, and hyperbola. Transformation of coordinates and simplification of equations. Polar coordinates, higher plane curves, tangents, normals, empirical equations, and elementary solid analytic geometry. Prerequisite: Courses 11 and 12.

27 lessons, 5 credits, \$25, Mr. Fischer

24 Differential Calculus. Discussions of limit and continuity of a function, derivative of algebraic and transcendental function. Simple application of derivatives, maxima and minima, differentials, rates, velocities and acceleration, radius of curvature. Law of the mean, indeterminate forms, partial differentiation, series. Prerequisite: Courses 11, 12, and 13.

27 lessons, 5 credits, \$25, Mr. Fischer

25 Integral Calculus. Integration of standard elementary forms, definite integral, rational fractions, integration by substitution, by parts, reduction formulas, application to areas, surfaces, and volumes. Use of integral tables. Prerequisite: Course 24.

27 lessons, 5 credits, \$25, Mr. Fischer.

26 Technical Mechanics: Statics. Characteristics of a force, parallelogram law, moments, couples, resultant of a force system, equilibrium of a force system, friction, centroids, moments of inertia, catenary. Prerequisite: Integral Calculus.

27 lessons, 5 credits, \$25, Mr. Priester

127 Technical Mechanics: Dynamics. Force, mass acceleration, translation and rotation, gyroscope, governors, work, energy, power, conservation of energy, impulse, momentum, loss of kinetic energy, conservation of momentum. For those who wish to apply the principles of dynamics and kinematics to engineering problems. Prerequisite: Technical Mechanics: Statics.

27 lessons, 5 credits, \$25, Mr. Priester

128 Strength of Materials. Mechanical and elastic properties of materials of construction, beams, shafts, columns, combined stresses, hollow cylinder rollers, plates, curved bars, springs, dynamic stresses, true stresses. Prerequisite: Integral Calculus and Technical Mechanics: Statics.

27 lessons, 5 credits, \$25, Mr. Priester

MECHANICAL ENGINEERING

1c Steam Power Plants I. For boiler operators. Fuels, combustion, furnaces, steam generators, pumps, pipe and fittings. Boiler room practices. Properties of steam; boiler-water conditioning. Prerequisite: Proficiency in arithmetic.

16 lessons, 3 Extension credits, \$15, Mr. Summers

3c Air Conditioning. A course designed to present the fundamentals of air conditioning to those interested in designing, installing, selling, or recommending the modern type of appliances for heating, cooling, humidifying, or otherwise conditioning the air for residences and other buildings. The subject matter of this course deals with the comfort conditions of the human body; the laws of temperature, pressure, humidity, etc.; calculation of heat transmission losses and heating loads; calculation of cooling loads including sensible heat load, effect of solar radiation, and latent heat load; humidification and dehumidification; air distribution and air motion; air duct design including pressure losses, friction losses, size of ducts, air velocities, and duct construction. Especial consideration has been given to the basic principles and their application to practical problems. Prerequisite: Elementary Algebra or permission of instructor.

16 lessons, 3 credits, \$15, Mr. Algren.

5c Heating and Ventilating. A course arranged to present the fundamentals of heating and ventilating to those interested in designing, installing, selling, or recommending modern types of appliances for heating and ventilating residences and other types of buildings. The subject matter of this course deals with calculation of heat transmission losses and heating loads; psychrometry and humidification; radiators and boilers; fuels, combustion, and chimney; hot water and steam heating systems; gravity and forced air heating system; ventilation standards and the design of ventilating systems. Prerequisite: Elementary Algebra or permission of instructor.

16 lessons, 3 credits, \$15, Mr. Algren

16c Refrigeration. This course is arranged to meet the demands of operating and design engineers as well as those employed in the sales, installation and servicing of refrigeration. It is a comprehensive study dealing with fundamental thermodynamics as applied to refrigeration; theoretical cycles of compression machines; refrigerants and their properties; principles of refrigeration; condensers, evaporators, and coolers; refrigerants; piping and fittings; automatic refrigerating machines; water vapor refrigerating systems; adsorption and absorption machines; refrigeration in air conditioning; heat transfer and methods of calculating refrigeration load. Prerequisite: Elementary Algebra or permission of instructor.

16 lessons, 3 Extension credits, \$15, Mr. Krupp

17c Industrial Plant Layout. This course is designed to present the fundamentals of layout work to those interested in improving existing plant layouts or designing new layouts. The purpose of all such work is to find the best possible way to produce industrial products.

Some of the problems covered are: plant location; building design and construction; material handling methods and equipment; safety con-

siderations; service facilities; selection and purchase of equipment; tools of layout work; practical plant problem. The first section of the course deals with the theory involved and the last section gives the student an idea of the many problems encountered by means of a complete plant layout problem. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Imhoff

18c Motion and Time Study Engineering. One of the most necessary and most used branches of industrial engineering, this work is absolutely essential for efficient plant operation and accurate wage determination.

Beginning with the skeletal structure of the subject, which gives the student a firm grasp of the logical development of the subject matter, all phases are explained, first in terms of present practice, and then in terms of the most recently developed techniques.

Some of the topics covered are: the importance of motion and time study; the skeletal structure of methods analysis; process analysis; operation analysis; micromotion study; motion study problems; the skeletal structure of time study; breakdown of job into elements; determination of time consumed; job rating; personal, fatigue, and delay allowances; new techniques in the field; timing techniques for typical industrial operations; time study problems. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Imhoff

ENGLISH

(For courses in humanities, see page 39.)

Mary C. Turpie, Ph.D., Assistant Professor of English

Helen Acker, M.A., Instructor in English

Ralph Haug, Ph.D., Instructor in English

Ora McLaughlin, M.A., Instructor in English

Robert C. Rathburn, M.A., Instructor in English

Viva Stephenson, B.A., Instructor in English

LITERATURE

†1c **Freshman Literature I.** Intended for students who have had work in composition equivalent to that of English A-B-C, but who have not had the training in the reading of imaginative literature included in that course. This course carries credit for the work in literature of English A. It includes the study of drama (Shakespeare's *Romeo and Juliet*), the short story (six modern ones by Joyce, Mansfield, Hemingway, etc.), poetry (six narrative poems), and the novel (Conrad's *Heart of Darkness*). Prerequisite: Composition 4-5-6.

16 lessons, 3 credits, \$15, Miss McLaughlin

†2c **Freshman Literature II.** This course carries credit for the work in literature of English B. It includes the study of drama (Shakespeare's *1 Henry IV*), poetry (seven descriptive, dramatic, and lyric poems), and the novel (Butler's *The Way of All Flesh*). Prerequisite: Composition 4-5-6.

16 lessons, 3 credits, \$15, Miss McLaughlin

† The material covered in Composition 4-5-6 and Freshman Literature I-II-III is equivalent to that given in classes in English A-B-C. Students completing these six courses through correspondence study will be entitled to fifteen credits. No credit toward graduation is allowed for Freshman Literature I-II-III until Composition 4-5-6 is completed.

†3c Freshman Literature III. This course carries credit for the work in literature of English C. It includes the study of prose satire (Swift's *Gulliver's Travels*), poetry (five poems of various kinds including Coleridge's "The Rime of the Ancient Mariner" and Marvell's "To His Coy Mistress"), and the short story (four modern ones by Forster, Lawrence, Porter, and Welty). Prerequisite: Composition 4-5-6.

16 lessons, 3 credits, \$15, Miss McLaughlin

***21 Introduction to Literature I.** An intensive study of the leading writers of poetry and prose and of their historical background. The entire course of three terms begins with Marlowe and ends with Arnold. A knowledge of English history from Elizabeth to Victoria is required. The first term includes Marlowe, Spenser, Bacon, Browne, Milton, Bunyan, and Dryden. Prerequisite: Composition 4-5-6.

27 lessons, 5 credits, \$25, Miss Acker

***22 Introduction to Literature II.** A continuation of 21. Addison and Steele, Swift, Pope, Fielding, Johnson, Boswell, and Sheridan. Prerequisite: Composition 4-5-6.

27 lessons, 5 credits, \$25, Miss Acker

***23 Introduction to Literature III.** A continuation of 22. Wordsworth, Lamb, Byron, Shelley, Keats, Carlyle, Browning, and Arnold. Prerequisite: Composition 4-5-6.

27 lessons, 5 credits, \$25, Miss Acker

38 Twentieth-Century Literature II. A survey of the main currents in contemporary poetry and drama. The course includes selections from the works of Hardy, Housman, Masfield, Sassoon, Amy Lowell, Sandburg, Jeffers, Eliot, MacLeish, O'Neill, Kaufman, Connelly, Rise, Behrman, and Anderson. Emphasis on the reading of characteristic excerpts. The following texts will be used: Sanders and Nelson, *Chief Modern Poets of England and America* (Macmillan); Chandler and Cordell, *Twentieth Century Plays*; American (Nelson), (1939 Edition). Prerequisite: Composition 4-5-6.

16 lessons, 3 credits, \$15, Miss Acker

39 Twentieth-Century Literature III. The novel since Thomas Hardy. The course covers at least the following three English Novels: Thomas Hardy's *Tess of the D'Urbervilles*, Joseph Conrad's *Lord Jim*, Arnold Bennett's *The Old Wives' Tale*; and the following three American novels: Ernest Hemingway's *A Farewell to Arms*, Thomas Wolfe's *Of Time and the River*, John Steinbeck's *The Grapes of Wrath*. Prerequisite: Composition 4-5-6.

16 lessons, 3 credits, \$15, Miss Acker

52 The English Novel I. The development of the novel from Defoe to Scott. Emphasis on the reading of a number of important novels and excerpts from others, supplemented by biographical and literary infor-

* Students may enter any course. Two courses are required as a prerequisite for a major sequence; the second and third are required for a teacher's certificate.

† The material covered in Composition 4-5-6 and Freshman Literature I-II-III is equivalent to that given in classes in English A-B-C. Students completing these six courses through correspondence study will be entitled to fifteen credits. No credit toward graduation is allowed for Freshman Literature I-II-III until Composition 4-5-6 is completed.

mation obtained from a textbook and from one of the ordinarily accessible encyclopedias. The following novels are read: *Robinson Crusoe*, *Joseph Andrews*, *Humphrey Clinker*, *Evelina*, *Pride and Prejudice*, and *The Heart of Midlothian*. Prerequisite: Composition 4-5-6, or exemption. 16 lessons, 3 credits, \$15, Mr. Rathburn

53 The English Novel II. Method as in Course 52, except that no excerpts will be read. The reading consists of *Bleak House*, *Vanity Fair*, *Jane Eyre*, *Wuthering Heights*, *Adam Bede*, *Barchester Towers*, *Mary Barton*, *Richard Feverel*. Prerequisite: Composition 4-5-6, or exemption. 16 lessons, 3 credits, \$15, Mr. Rathburn

55 Shakespeare I. Shakespeare's development as a dramatist. A careful study of the Comedies. Prerequisite: Composition 4-5-6, and 6 additional credits in English. 16 lessons, 3 credits, \$15, Miss Stephenson

56 Shakespeare II. A continuation of Course 55, with emphasis on the Tragedies. Prerequisite: Composition 4-5-6 and 6 additional credits in English. 16 lessons, 3 credits, \$15, Miss Stephenson

73 American Literature I. A survey of American literary development from the seventeenth century to the middle of the nineteenth. Prerequisite: Composition 4-5-6 and 6 additional credits in English. 16 lessons, 3 credits, \$15, Miss Turpie

74 American Literature II. A continuation of American Literature I. A survey of American literary development from Whitman to the present day. Prerequisite: Composition 4-5-6 and 6 additional credits in English. 16 lessons, 3 credits, \$15, Miss Turpie

75 Chaucer. Reading of selections from *The Canterbury Tales* (and of the following critical discussions: *Chaucer and His Poetry* by G. L. Kittredge.) The emphasis of this course will be on content and literary forms. Only such attention as is necessary to illuminate the text and to make the reading easy and enjoyable will be given to the life, times, and language of Chaucer. Prerequisite: Composition 4-5-6 and 6 additional credits in English. 21 lessons, 4 credits, \$20, Miss Stephenson

COMPOSITION

Preparatory English. See page 56.

Vocabulary Building. See page 53.

4 Composition IV. Introduction to the college study of English composition: review of grammar; the writing, criticism, and revision of themes; study of models of contemporary English prose. Emphasis throughout on clarity and correctness, especially in the sentence. Composition 4-5-6 fulfills the freshman requirement. No prerequisite. 16 lessons, 3 credits, \$15, Mr. Haug

5 Composition V. Continuation of Composition IV: the writing, criticism, and revision of themes; study and analysis of models of contemporary English prose; the preparation of research papers. Emphasis throughout on effectiveness (rather than mere correctness) in the sentence, and on coherence in the whole composition. Prerequisite: Composition 4.

16 lessons, 3 credits, \$15, Mr. Haug

6 Composition VI. Continuation of Composition V, including themes and reading; but the emphasis throughout is on diction, the history of the English language, and the use of the dictionary. Prerequisite: Composition 5.

16 lessons, 3 credits, \$15, Mr. Haug

26c Scientific Writing. Study of the more common forms and techniques used in presenting scientific and technical information. Emphasis throughout is on the inductive method. Prerequisite: English A-B-C or Composition 4-5-6 or exemption from requirement; a course in a natural science is desirable.

16 lessons, 3 credits, \$15, Mr. Haug

***27 Advanced Writing I—Exposition.** Study and writing of essays with emphasis on structure and organization. The student is free to choose his own essay subjects. The course is intended to aid the student in working out individual problems. Prerequisite: English A-B-C or Composition 4-5-6 or exemption from requirement.

16 lessons, 3 credits, \$15, Mr. Haug

***28 Advanced Writing II—Narration and Description.** Study of principles of description and narration with analysis of specimens and exercises in writing. Prerequisite: Advanced Writing I.

16 lessons, 3 credits, \$15, Mr. Haug

69. Short Story Writing I. A basic study of short story technique, with emphasis on the student's completion of several original stories. Manuscripts will be carefully read, and suggestions for improvement will be offered. The textbook is the work of a successful author, and the stories studied illustrate a variety of writing methods. Prerequisites: Composition 4-5-6 and Advanced Writing 27-28.

16 lessons, 3 credits, \$15, Miss McLaughlin

70. Short Story Writing II. In this course the student should reap the benefits of what he has learned in Short Story Writing I. He will write four stories, in all approximately 10,000 words, and these stories will be carefully read and criticized. He will read a number of useful stories and consider such things as style, tone, pace, suggestion, and symbols. Prerequisite: Short Story Writing I.

16 lessons, 3 credits, \$15, Miss McLaughlin

80c Independent Writing. Specifically designed for advanced students. The student is given complete freedom; but assignments will be made and lesson material supplied from time to time. The instructor will criticize any writing which the student submits.

16 installments of a total of approximately 8,000 words. 3 Extension credits, \$15, Miss Acker

* Both Composition 27, 28 or 27, 29 required for credit.

FRENCH

John M. Sullivan, M.A., Assistant Professor of Romance Languages

A French pronunciation record prepared by the Romance Languages and the Correspondence Study Departments may be purchased for \$1.50. Not required but advised.

1 Beginning French I. A course in the essentials of the French language; grammar, reading, pronunciation, easy composition. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Sullivan

2 Beginning French II. A continuation of Course 1. Prerequisite: Course 1 or one year of high school French.

27 lessons, 5 credits, \$25, Mr. Sullivan

3 Intermediate French I. Review of grammar; composition; reading of representative authors. Prerequisites: Course 2 or two years of high school French.

27 lessons, 5 credits, \$25, Mr. Sullivan

4 Intermediate French II. A continuation of Course 3. Prerequisite: Course 3 or 3 years of high school French.

27 lessons, 5 credits, \$25, Mr. Sullivan

53 Elementary French Composition. Translations of passages of connected prose dealing with everyday life in France. Prerequisite: Course 4.

16 lessons, 3 credits, \$15, Mr. Sullivan

63 Advanced French Composition. A continuation of Course 53. It affords practical exercises in prose composition. Prerequisite: Course 53 or equivalent.

16 lessons, 3 credits, \$15, Mr. Sullivan

GEOGRAPHY

Fred E. Lukermann, B.S., Teaching Assistant in Geography

41 Geography of Commercial Production. An introductory course in economic geography with special emphasis on commodities of commercial significance. Particular attention is given to the world patterns of raw material, occurrence and production, as well as to the associated centers of industrial fabrication. No prerequisites.

27 lessons, 5 credits, \$25, Mr. Lukermann

Registrations accepted after March 1, 1951.

GEOLOGY

W. Charles Bell, Ph.D., Associate Professor of Geology

8 Introductory Geology. An introductory treatment of the materials of the earth and of geologic processes; principles of earth sculpture, glaciation, volcanic activity, mountain building, etc., as a key to the interpretation of the surface features and the history of the earth. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Bell

GERMAN

Lynwood G. Downs, Ph.D., Associate Professor of German
 Edwin F. Menze, Ph.D., Assistant Professor of German
 Herman Ramras, M.A., Assistant Professor of German
 Gina Wangsness, M.A., Assistant Professor of German

A German pronunciation record prepared by the German Department and Correspondence Study Department is available for \$1.50. Not required but advised.

1 Beginning German I. Grammar and easy composition. The course aims to give the student a knowledge of the elements of German grammar, the facility to read easy German, and to write simple German sentences. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Downs

2 Beginning German II. A continuation of Course 1. Prerequisite: Course 1 or one year of high school German.

27 lessons, 5 credits, \$25, Mr. Downs

3 Beginning German III. Grammar and composition continued; selected readings in easy prose and verse. Prerequisite: Course 2 or two years of high school German.

27 lessons, 5 credits, \$25, Miss Wangsness

4 Intermediate German. Selections from modern narrative and descriptive prose. Assigned outside readings and reports. Prerequisites: Courses 1, 2, and 3 or equivalent.

27 lessons, 5 credits, \$25, Miss Wangsness

24 Introduction to Chemical German. Selections of simple chemical German prose. Vocabulary and grammatical exercises. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Downs

25-26 Chemical German. Reading of works on chemistry. Vocabulary exercises. Prerequisite: Course 24, 1, or one year of high school German.

Course 25—16 lessons, 3 credits, \$15, Mr. Downs

Course 26—16 lessons, 3 credits, \$15, Mr. Downs

33 Medical German. This course is intended primarily for medical students. Articles on anatomy, biology, embryology, comparative anatomy, surgery, and other fields of medicine. Prerequisite: Course 3 or equivalent.

27 lessons, 5 credits, \$25, Miss Wangsness

50 Elementary Composition I. A review of the fundamentals of German grammar with particular attention to the idioms and characteristics of conversational and written German. Prerequisite: Course 4 (Intermediate German).

11 lessons, 2 credits, \$10, Mr. Menze

51 Elementary Composition II. Translation and grammar review. Prerequisite: Course 50.

11 lessons, 2 credits, \$10, Mr. Menze

52 Elementary Composition III. Translation and writing of an original dialog. Prerequisite: Course 51.

11 lessons, 2 credits, \$10, Mr. Menze

63 Drama I. Study of the nineteenth-century drama in Germany. Selected plays of Hebbel, Hauptmann, or Sudermann, with assigned readings and reports. Open to those who have completed Courses 1, 2, 3, and 4. 24 lessons, 4½ credits, \$22.50, Mr. Ramras

64 Drama II. Study of the German drama of the eighteenth century and through the classic period. Selected plays of Lessing, Goethe, or Schiller, with assigned readings. Prerequisite as in Course 63. 24 lessons, 4½ credits, \$22.50, Mr. Ramras

GREEK

William A. McDonald, Ph.D., Associate Professor of Classics

1 Beginning Greek I. The declensions and conjugations and the simpler rules of syntax together with translation of sentences from Greek into idiomatic English and from English into Greek. No prerequisite. 27 lessons, 5 credits, \$25, Mr. McDonald

2 Beginning Greek II. General principles, inflections, word formations, syntax, elementary readings, composition. Prerequisite: Course 1. 27 lessons, 5 credits, \$25, Mr. McDonald

3 Beginning Greek III. Prerequisite: Course 2. 27 lessons, 5 credits, \$25, Mr. McDonald

HEALTH

Philip D. Kernan, M.D., Instructor in School of Public Health
Abraham B. Rosenfield, M.D., Lecturer in Public Health

1c Maternal and Child Hygiene. Prepared by the Division of Maternal and Child Health of the Minnesota Department of Health. The lessons take up personal hygiene and home hygiene with special emphasis on maternal and child welfare; diseases of infancy and childhood and care of sick in the home; prenatal hygiene, care of the mother, common complications and how to avoid them, preparation for confinement and after-care of the mother and child; infant care and feeding, weaning and later feeding, growth, development, and training. This course is given in co-operation with state agencies without charge. Open to residents of Minnesota only. Send requests directly to the Minnesota Department of Health, Division of Maternal and Child Health, University of Minnesota. 15 lessons, no credits, free, Dr. Rosenfield

P.H. 3 Personal Health. Elementary principles of normal body function; predisposing and actual causes of disease; ways in which disease may be avoided. Open without prerequisite to those who have not taken Human Biology 10c in General College. 12 lessons, 2 credits, \$10, Dr. Kernan

P.H. 50 Public and Personal Health. Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Open without prerequisite to those who have not taken Courses 3, 4, or Human Biology 10c in the General College. 16 lessons, 3 credits, \$15, Dr. Kernan

HISTORY

Tom B. Jones, Ph.D., Professor of History
Cyril Allen, Ph.D., Instructor in History
Phyllis Booton, B.S., Instructor in History
Walter C. Schuiling, M.A., Instructor in History
Earl Spangler, M.A., Instructor in History
Mary White, B.S., Instructor in History

1 Civilization in the Modern World I. A survey of European history from 1500 to 1763. The emphasis is upon the rise of state. No prerequisite. 16 lessons, 3 credits, \$15, Mrs. White

2 Civilization in the Modern World II. A survey of European history from 1763 to 1870. Emphasis is placed upon the struggle for control of the state. No prerequisite. 16 lessons, 3 credits, \$15, Mrs. White

3 Civilization in the Modern World III. A survey of European history from 1870 to the present. Emphasis is placed upon impact of industrialism in nineteenth-century civilization and the development of the problems that have upset the world civilization in the twentieth century. No prerequisite. 16 lessons, 3 credits, \$15, Mrs. White

4 English History. Conquest and settlement, the feudal age, foreshadowings of limited monarchy and popular government. No prerequisite. 16 lessons, 3 credits, \$15, Mrs. White

5 English History. Tudors and Stuarts, parliament versus king, colonization. No prerequisite. 16 lessons, 3 credits, \$15, Mrs. White

6 English History. The coming of democracy, Britain and Europe, Empire and Commonwealth. No prerequisite. 16 lessons, 3 credits, \$15, Mrs. White

7c Survey of Minnesota History. The history of Minnesota from the explorers to the present with emphasis on the social, cultural, and economic, as well as the political, history of the state. The state's racial composition and contributions, the rise of industries, the evolution of transportation and of farming, and changes in social and political attitudes are among the topics studied. Access to Folwell's *History of Minnesota* and the magazine *Minnesota History* will be required. Not open to those who have completed History 79. No prerequisite. 21 lessons, 4 credits, \$20, Miss Booton

8c The Foundations of Modern Civilization. An insight into the development of human institutions and practices which comprise what is called modern civilization. A study of primitive man, civilizations of the Ancient Near East, Greece, and Rome; the decline of Rome, and, with it, ancient civilization in the West; the development of modern civilization which may be said to have been launched by 1500 A.D. Throughout the course, emphasis is placed on culture traits, such as religion, art, litera-

ture, science, economics, political institutions, and whatever else made up a civilization at a given time. Not open for credit to those who have completed History 1, 2, 3. No prerequisite.

21 lessons, 4 credits, \$20, Mrs. White

14 History of Ancient Civilization I. A survey of the rise of civilization in the Ancient Near East from the earliest times to 500 B.C. Emphasis is placed upon the origin of culture and its development in complexity from the primitive to the civilized stage. Special attention is given to the civilizations of Babylonia, Egypt, Indus Valley, Syria, Palestine, and Crete. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Jones

14a Basic Readings in Ancient Civilization I. An introduction to the literature of the Ancient Near East and its relation to the Old Testament. The reading will include translations of Babylonian and Egyptian epics, religious texts, folk tales, and public records, Assyrian, Hittite, and North Syrian literature as well as the Greek epics will be included. Prerequisite: History 14 or concurrent registration.

12 lessons, 2 credits, \$10, Mr. Jones

15 History of Ancient Civilization II. The history of the rise and flowering of Greek civilization from the earliest times to the death of Alexander the Great in 323 B.C. Special emphasis is placed on Greek civilization in the fifth century (Age of Pericles) with attention to the political, social, literary, artistic, and philosophic achievements of that period. No prerequisite. (Note: the student will, however, find History 14 helpful in providing a background for the Greek period.)

16 lessons, 3 credits, \$15, Mr. Jones

15a Basic Readings in Ancient Civilization II. An introduction to the major authors of the classical Greek period. Selections from the poets, the dramatists, Herodotus, Thucydides, Xenophon, the orators Plato and Aristotle. Prerequisite: History 15 or concurrent registration.

12 lessons, 2 credits, \$10, Mr. Jones

16 History of Ancient Civilization III. The climax of ancient civilization during the Hellenistic Age (323-133 B.C.) and the Roman Imperial Period followed by the decline of Rome and of ancient civilization (to about 300 A.D.). The three main topics to be considered are (1) the civilization of the ancient world at its peak, (2) the rise and flowering of Roman culture, and (3) the reasons for the decline of ancient civilization. Special attention will be paid to political institutions, art, literature, economics and society, philosophy, and ancient science. No prerequisite. (Note: it is suggested that History 16 be preceded by History 14 and 15 in order that the student may acquire a background for the history of the Roman period.)

16 lessons, 3 credits, \$15, Mr. Jones

16a Basic Readings in Ancient Civilization III. An introduction to the literature of the Hellenistic and Roman periods. Selections from poetry, drama, history, biography, science, philosophy, oratory, and letters. The

New Testament and early Christian writings will be considered in their relation to pagan literature. Prerequisite: History 16 or concurrent registration.

12 lessons, 2 credits, \$10, Mr. Jones

20 American History I (1763-1840). This course covers the period from 1763 to the close of the War of 1812, and includes the background of the Revolution, the war itself, and the formation of the national government, the growth of parties, and the conflicts over foreign policies, the development of democracy and of nationalism. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Spangler

21 American History II (1840-1877). A survey of the development of the United States from the close of the War of 1812 to the close of the Civil War. Special emphasis upon the westward movement, the new democracy, the tariff and public land questions, sectionalism and slavery conflicts, and the background of the Civil War. Careful study of the social and economic changes of the period. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Spangler

22 American History III (1877 to present). A survey of American history from the close of the Civil War to the entry of the United States into World War II. Special emphasis is laid on the economic changes of the period and their reaction upon politics. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Spangler

50 Greek History I. The history of Greece and the Aegean area from earliest times to 500 B.C. The following topics will be considered: the archeology of the prehistoric period with special emphasis upon Minoan and Mycenaean civilization and Troy; the rise of Greek culture (1000-750 B.C.); the rise of Sparta and Athens and the early development of Greek literature, art, and philosophy (700-500 B.C.). Prerequisite: nine credits in history. Open to juniors and seniors without prerequisite.

16 lessons, 3 credits, \$15, Mr. Jones

51 Greek History II. The classical period of Greek civilization (500-362 B.C.). Main topics to be considered: the Persian Wars, the wars between Athens and Sparta, the Spartan and Theban attempts to establish Greek empires; Greek society and economics; classical art, architecture, literature (with special attention to the drama), and philosophy. Readings in translated sources. Prerequisite: History 50. Open to juniors and seniors without prerequisite.

16 lessons, 3 credits, \$15, Mr. Jones

52 Greek History III. History of the Hellenistic phase of Greek civilization (362-146 B.C.). Greek history from the rise of Macedonia and Alexander the Great to the Roman conquest. Special emphasis upon art, architecture, literature, philosophy, and science. Prerequisite: History 51. Open to juniors and seniors without prerequisite.

16 lessons, 3 credits, \$15, Mr. Jones

50a Roman History I. Rome and Italy from the earliest times to 133 B.C. Survey of Italian prehistory, the Roman monarchy, the establishment of the Roman Republic, and Roman expansion in the Mediter-

anean area to 133 B.C. Archeological studies, the evolution of the Roman government, as well as economic and cultural developments, will be stressed. Prerequisite: nine credits in history. Open to juniors and seniors without prerequisite.

16 lessons, 3 credits, \$15, Mr. Jones

51a Roman History II. The fall of the Roman Republic and the rise of the Empire (133 B.C. to 68 A.D.). Political, economic, and social factors. Attention to literature and general culture. Reading in the sources (in translation) will form part of the work. Prerequisite: History 50a. Open to juniors and seniors without prerequisite.

16 lessons, 3 credits, \$15, Mr. Jones

52a Roman History III. The flowering and decline of the Roman Empire (68 to 305 A.D.). The history of Roman civilization from Vespasian to the abdication of Diocletian. Prerequisite: History 51a. Open to juniors and seniors without prerequisite.

16 lessons, 3 credits, \$15, Mr. Jones

73c-74c-75c Survey of Latin-American History. A survey of the historical evolution of the Latin-American countries from 1492 to the present time. The course is divided into three sections: 73c, Spanish and Portuguese exploration and settlement in the New World; 74c, The Wars for Independence and the nineteenth-century development of Latin America; 75c, The Twentieth Century. The course may be taken for credit in two ways: the whole sequence (73c-74c-75c) may be completed for nine credits, or 75c (The Twentieth Century) may be taken separately for 3 credits. No prerequisite.

16 lessons, 3 credits each section, \$15 each, Mr. Allen

79 History of Minnesota. Minnesota's history since the coming of the French with primary emphasis on the period following statehood. The development of the state's principal industries, the growth of its cities, its racial composition, and its changes in social and political attitudes. Access to Folwell's *History of Minnesota* and the magazine *Minnesota History* will be required.

16 lessons, 3 credits, \$15, Miss Booton

125 Russian History I. A survey of Russian history to the time of Peter the Great, including the origins of the Russian state, Kievan Russia, and the rise of Muscovy. Prerequisites: History 1, 2, and 3 or the equivalent.

16 lessons, 3 credits, \$15, Mr. Schuiling
Registrations accepted after March 1, 1951.

126 Russian History II. This course covers the period from Peter the Great through the Crimean War and includes the study of the Europeanization of Russia and the crystallization of the Empire. Prerequisites: History 1, 2, and 3 or the equivalent.

16 lessons, 3 credits, \$15, Mr. Schuiling
Registrations accepted after March 1, 1951.

127 Russian History III. A survey of the last years of the Russian Empire, the background of the revolution, and the establishment and history of the Soviet government. Prerequisites: History 1, 2, and 3 or the equivalent.

16 lessons, 3 credits, \$15, Mr. Schuiling
Registrations accepted after January 1, 1951.

HOME ECONOMICS

(See page 13.)

HUMANITIES

Alburey Castell, Ph.D., Professor of Philosophy
Neil Swanson, Ph.D., Instructor in Philosophy

1 Humanities in the Modern World I. The old regime, the revolution and Napoleon. Period: from about 1770 to about 1830. Authors: Voltaire, Rousseau, Burke, Paine, Goethe, and the poets. One historical novel, Tolstoy's *War and Peace*. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Castell

4 Humanities in the Modern World IV. Civilization between two wars; the impact of psychoanalysis; a critique of communism; a prediction of the future. Period: from World War I to the present. Authors: Huxley, Bellamy, Freud, O'Neill, Lenin, Mahaux, Koestler. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Swanson
Registrations accepted after March 1, 1951.

INTERIOR DECORATION

(See Art, page 13.)

ITALIAN

Emmert M. Brackney, M.A., Assistant Professor of Romance Languages

1 Beginning Italian I. Elements of pronunciation, grammar, and suitable readings. Emphasis upon accurate translation and composition. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Brackney

JOURNALISM

Mitchell V. Charnley, M.A., Professor of Journalism
W. Edwin Emery, Jr., Ph.D., Associate Professor of Journalism
George S. Hage, B.A., Instructor in Journalism
Carl K. Towley, B.A., Assistant Director of National Scholastic Press Association

13 Newspaper Reporting I. Study of the newspaper audience; structure and writing of the news story; study of news values; exercises in journalistic style; analysis of newspapers; news gathering and reportorial methods. Numerous writing assignments. Prerequisite: English Composition 4-5-6 or consent of instructor.

16 lessons, 3 credits, \$15, Mr. Charnley

14 Newspaper Reporting II. Continued study of the news gathering and of writing the "straight" news story; the human interest or feature story; analysis of newspapers; special types of reporting; advanced interviewing. Numerous writing assignments. Prerequisite: Course 13.

16 lessons, 3 credits, \$15, Mr. Charnley

15 Newspaper Reporting III. Study of newspaper law, including libel, rights of the press, study of "privilege," and other legal regulations affecting the press; advanced reporting; the interpretative story; the newspaper feature story. Numerous writing assignments. Prerequisite: Course 14.

16 lessons, 3 credits, \$15, Mr. Charnley

68 Radio Writing. Study and practice in the several forms of radio writing, including news, advertising, and dramatic scripts. Radio analyses and surveys. Numerous writing assignments. Prerequisite: English Composition 4-5-6 or consent of instructor.

16 lessons, 3 credits, \$15, Mr. Charnley

73 Newspaper and Magazine Articles I. A study in the writing of facts and opinion articles, interviews and expository articles, both serious and feature, for newspapers and magazines. Main emphasis is laid on the journalistic type of articles rather than the essay type. (Not open to those who have completed Journalism 69.) Prerequisite: Course 15.

16 lessons, 3 credits, \$15, Mr. Hage

75c Newspaper and Magazine Articles II. A continuation of Course 73, including a study of typical first-class magazines and newspapers, both of specialized and general interest, including trade publications. Prerequisite: Course 73.

16 lessons, 3 credits, \$15, Mr. Hage

78 Public Relations. A course in the techniques of interpreting business and industrial organizations, educational and scientific institutions, social welfare groups, government agencies and other organizations to the public through the press, radio, trade papers, magazines, pamphlets, circulars, bulletins, direct mail, etc. An analysis of the methods of using each of the media. Policy determinants in public relations. Prerequisite: Journalism 69 or 73 or consent of instructor.

16 lessons, 3 credits, \$15, Mr. Emery

82 The Supervision of School Publications. A practical consideration of the problems of the high school teacher, especially of the teacher who is inadequately prepared for such work, who supervises the newspaper, or yearbook. Editorial content; staff organization; editing; headlines; topography; make-up; business management; costs; lithography; engraving; photography and other subjects are considered. Access to *Scholastic Editor* is required. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Towley

LANDSCAPING

Robert A. Phillips, B.S., Assistant Professor of Horticulture

Hort. 24 Home Landscape Planning. A course for those who want to know how to plan the home grounds for greater use and enjoyment, with an introduction to the principles of landscape design, their use, and im-

portance in the arrangement and decoration of the home grounds. This course will be an artistic approach to the problems and prospects of home landscaping. It will also serve as a background for the pursuit of the popular hobby of gardening. There will be an independent student project of planning either a hypothetical home plot or the home place of the student. In this project the student will be guided by the instructor. The course will give the home owner and others interested in home landscaping a practical program of study.

16 lessons, 3 credits, \$15, Mr. Phillips

LATIN

Margaret M. Forbes, B.A., Instructor in Classics

The following courses represent a graded sequence completing Junior College requirements, or the equivalent of four years of high school Latin. The prerequisite for each course (except Course 1) is the course immediately preceding, or the equivalent credits.

1 Beginning Latin I. Basic vocabulary and grammar; practice in reading and writing Latin; workbook exercises; background readings in Roman life and history. No prerequisite.

27 lessons, 5 credits, \$25, Mrs. Forbes

2 Beginning Latin II. A continuation of Course 1; similar in content and method on a more advanced level, leading from simplified Latin to prose, verse, comedy in the original Latin.

27 lessons, 5 credits, \$25, Mrs. Forbes

3 Intermediate Latin Reading. Continuing from Courses 1 and 2, but shifting the emphasis to the reading of varied selections to introduce the student to Latin literature in general.

27 lessons, 5 credits, \$25, Mrs. Forbes

4 Selections from Latin Prose and Poetry. Continuing from Course 3, completing a survey of Latin literature in selections from the more important writers.

27 lessons, 5 credits, \$25, Mrs. Forbes

5 Vergil's Aeneid. Reading of selections from Books I-VI; background reading in Roman life and thought.

27 lessons, 5 credits, \$25, Mrs. Forbes

6 Cicero. Reading of selections from the public addresses and literary writings of Cicero.

27 lessons, 5 credits, \$25, Mrs. Forbes

LIBRARY TRAINING

Joyce Davenport, M.A., Instructor in Library Training

52 Descriptive Cataloging. The forms and principles involved in making a dictionary card catalog. Based primarily on Aker's "Simple Library Cataloging." Directions for the use of printed cards prepared by the Wilson Company and the Library of Congress. No prerequisite. It is recommended that this course precede Course 54.

16 lessons, 3 credits, \$15, Miss Davenport

54 Elementary Classification and Subject Heading. Based on the un-abridged edition of the Dewey Decimal Classification and Sears's "List of subject headings for small libraries." Aims to give an understanding of methods of classification and the principles of assigning subject headings to books in a library. Attention is given to modifications and adaptations useful in school or small public libraries. Includes use of Cutter-Sanborn author numbers and preparation of a shelf-list. No prerequisite.

16 lessons, 3 credits, \$15, Miss Davenport

MATHEMATICS

(For students who want credit in the College of Science, Literature, and the Arts)

Elizabeth Carlson, Ph.D., Associate Professor of Mathematics
 Gladys E. C. Gibbens, Ph.D., Associate Professor of Mathematics
 Jacob E. Bearman, Ph.D., Assistant Professor of Mathematics
 Ella Thorp, M.A., Assistant Professor of Mathematics
 Morton Kenner, B.A., Instructor in Mathematics

Engineering Mathematics. See page 24.

High School Mathematics. See page 57.

1 Higher Algebra. A review and a collegiate treatment of the topics of elementary algebra for those who have had one year of elementary algebra. Open for credit to any student offering not more than one-half year of high school higher algebra for entrance.

27 lessons, 5 credits or 1 entrance unit, \$25, Miss Carlson

5 Solid Geometry. Standard theorems and exercises. Practice in special proofs and original exercises to develop imagination and initiative. Prerequisite: Plane Geometry. *Acceptable for 3 credits in the College of Science, Literature and the Arts, provided special arrangements have been made at the time of registration.*

20 lessons, 3 credits or ½ entrance unit, \$19.50, Mr. Kenner

***6 Trigonometry.** A beginning course of collegiate grade in plane trigonometry and logarithms. Solutions of triangles with applications to surveying and physics. Emphasis on properties of trigonometric functions, identities, and equations. Prerequisite: Mathematics 1, or high school higher algebra. § Open for credit to students who have not taken trigonometry and to those who are offering high school trigonometry for entrance.

27 lessons, 5 credits, \$25, Miss Thorp

7 College Algebra. Quadratic equations, simultaneous quadratic equations, progressions, mathematical induction, the binomial theorem, permutations, combinations, probability, determinants, the theory of equations, infinite series, and partial fractions. Prerequisite: Mathematics 6 or registration and satisfactory progress in Mathematics 6.

27 lessons, 5 credits, \$25, Mr. Bearman.

* No student may receive credit for both Course 6 and Course 9c, or both Course 8 and Course 9c.

§ A substantial high school course in advanced algebra for one semester is sufficient. However, some students with less than one year of advanced high school algebra may prefer to take Mathematics 1 before 6 or 8.

***8 Commerce Algebra.** Logarithms and selected topics in college algebra. A preparatory course for Mathematics 20. Prerequisite: Mathematics 1 or high school higher algebra. §

27 lessons, 5 credits, \$25, Miss Thorp

***9c Logarithms.** Definition and fundamental properties of logarithms. Use of logarithms in computing. Prerequisite: Mathematics 1 or high school higher algebra.

6 lessons, 1 credit, \$5, Mr. Bearman.

20 Mathematics of Investment. The mathematical theory of simple interest, simple discount, compound interest and annuities certain. The applications deal with promissory notes, banking practice in the lending of money, the discharge of debts by periodic payments, depreciation funds, perpetuities, capitalization problems, and bonds. Prerequisite: Mathematics 6 and 7, or 7 and 9c, or 8, or 15 and 16.

27 lessons, 5 credits, \$25, Miss Thorp

30 Analytic Geometry. The elements of plane analytic geometry including the geometry of the conic sections, with a brief introduction to solid analytic geometry. Prerequisite: Courses 6 and 7, or 15 and 16.

27 lessons, 5 credits, \$25, Miss Carlson

50 Calculus I. Differential calculus. Limits, continuity, differentiation, maxima and minima, applications to geometry and physics, differentials, law of the mean, indeterminate forms, convergence of series, series expansion and partial differentiation. Prerequisite: Mathematics 30.

27 lessons, 5 credits, \$25, Miss Gibbens

51 Calculus II. Integral calculus. Indefinite integrals, definite integrals, convergence of improper integrals, the definite integral as the limit of a sum, multiple integrals and applications to geometry and mechanics. Prerequisite: Mathematics 50.

27 lessons, 5 credits, \$25, Miss Gibbens

62 Theory of Equations I. Complex numbers, the general solution of cubic and quartic equations, numerical solution of equations, and relations between algebraic equations and geometric constructions by ruler and compasses. Prerequisite: Mathematics 50.

16 lessons, 3 credits, \$15, Miss Carlson

106 Differential Equations. A problem course in the solution of ordinary differential equations, with the basic theory necessary for the development of the methods to be used. Prerequisite: Mathematics 51.

16 lessons, 3 credits, \$15, Miss Gibbens

MUSIC

Mary E. Malcolm, M.A., Assistant Professor of Music

Paul Fetler, M.M., Instructor in Music

4 Harmony I. 16 lessons, 3 credits, \$15, Miss Malcolm

5 Harmony II. 16 lessons, 3 credits, \$15, Miss Malcolm

* No student may receive credit for both Course 6 and Course 9c, or both Course 8 and Course 9c.

§ A substantial high school course in advanced algebra for one semester is sufficient. However, some students with less than one year of advanced high school algebra may prefer to take Mathematics 1 before 6 or 8.

6 Harmony III. These courses are the equivalent to the written theory given at the University of Minnesota for resident students in the Department of Music. Consist of the study of scales, intervals, chords, their structure and progression, harmonization of given basses, and melodies. Registration accepted only upon approval of previous preparation in music, which must be fully stated in the application.

16 lessons, 3 credits, \$15, Miss Malcolm

9c Counterpoint. Counterpoint is the creative study of writing one or more independent melodies against each other in a strict style. Such a study is of great value in particular to the student of composition. This course is based directly on sixteenth-century polyphony. Works of Lassus and Palestrina are examined and the rules for writing formulated accordingly. This is an elementary course. The student learns the writing of good melodic lines and gradually continues with two-voice counterpoint. The writing of canon is an important part of this course. Prerequisite: A general knowledge of music theory.

16 lessons, 3 credits, \$15, Mr. Fetler

NORWEGIAN

Pauline Farseth, B.A., Instructor in Scandinavian

1 Beginning Norwegian I. Complete survey of Norwegian grammar. Composition. Reading of easy prose. No prerequisite.

27 lessons, 5 credits, \$25, Miss Farseth

2 Beginning Norwegian II. Study of short stories and Björnson's *En Glad Gut*. Reading and composition. Prerequisite: Course 1 or equivalent.

27 lessons, 5 credits, \$25, Miss Farseth

3 Intermediate Norwegian. Continuation of Course 2. Based on Björnson's *Synnöve Solbakken*. Reading and composition. Prerequisite: Course 2 or equivalent.

27 lessons, 5 credits, \$25, Miss Farseth

Note. Advanced courses in Norwegian literature are also available. Interested students should write to the Correspondence Study Department for information.

PARLIAMENTARY LAW

Ralph Miller, M.S., Associate Professor in the School of Agriculture

A41 Parliamentary Law. Fundamental principles and practices of parliamentary law essential for conducting meetings and participating in community organizations. Particular emphasis is given to discussion of problems relative to federated clubs, P.T.A., Legion Auxiliary, extension organizations, farm organizations, such as: Grange, Farm Bureau, Farmers Union, 4-H clubs, and Future Farmers of America. Topics to be considered will include formation of organizations, drafting of constitutions, duties of officers, motions, amendments, nominations and elections. No prerequisite.

12 lessons, 2 Extension credits, \$10, Mr. Miller

PHILOSOPHY

A. Carl Ahlén, Ph.D., Instructor in Philosophy
Neil Swanson, Ph.D., Instructor in Philosophy

1 Problems of Philosophy. An introductory course dealing with man's attempt to understand the universe and his relation to it. Among the topics to be considered are: human knowledge, its nature and scope; appearance and reality; determinism and causality; value and conduct. 27 lessons, 5 credits, \$25, Mr. Ahlén

2 Logic. There is a difference between "straight" and "crooked" thinking. Logic is the study of these differences. What is a fallacy? How many 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 is meant 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"? 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.

16 lessons, 3 credits, \$15, Mr. Ahlén

3 Ethics. A study of the principles and problems of right and wrong in human relationships. The course will include such topics as the following: The history of moral development, the ethical theories of classical philosophy, the problem of free-will, the nature of man, the ethical problem involved in international relations and in other social problems, the relationship of religion to ethics, and the problem of how to live effectively. The course should help the student to formulate his own concept of the good. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Swanson

PHYSICAL EDUCATION COURSES FOR MEN

Ralph A. Piper, Ed.D., Professor of Physical Education
David C. Bartelma, Ed.D., Associate Professor of Physical Education
Hershel R. Giles, M.A., Assistant Professor of Physical Education
Gerald B. Fitzgerald, M.A., Lecturer in Physical Education

32 Introduction to Principles of Physical Education. Principles and problems connected with the philosophy, organization, administration, program construction, and methods of teaching physical education. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Bartelma

56 Nature and Function of Play. A fundamental background course for either recreation or physical education. Proceeds from an understanding of the biological play drive, theories and philosophies of play, to the place of play in the modern world and its function in building an integrated personality. Prerequisite: Psychology 1-2.

16 lessons, 3 credits, \$15, Mr. Giles

57 Operation of Recreation Centers. A course designed especially to aid the teacher of art, music, industrial or physical education who has been given the responsibility of assisting with, or directing, the summer recreation program. Programs, leadership, facilities and equipment, and problems of operation and administration. No prerequisite. 16 lessons, 3 credits, \$15, Mr. Fitzgerald

63 Organization and Administration of Physical Education. Problems of organization, administration, and supervision. Arrangement of programs in physical education activities. Discussion of place of athletics in the program; schedule making; construction, equipment, and care of gymnasiums and athletic fields. No prerequisite. 16 lessons, 3 credits, \$15, Mr. Piper

83 Course in School Health Education: Method and Content, listed this page, is open to both men and women.

PHYSICAL EDUCATION COURSES FOR WOMEN

Gertrude Baker, Ph.D., Director and Professor of Physical Education
Dorothy L. Ericson, Ed.D., Assistant Professor of Physical Education
Eloise M. Jaeger, M.Ed., Assistant Professor of Physical Education

82 Principles and Curriculum of Physical Education. In this course principles of philosophy, curriculum, method, and evaluation are studied in the light of their psychological, biological, and social significance. No prerequisite.

16 lessons, 3 credits, \$15, Miss Baker

Ed.T. 83. School Health Education: Method and Content. Study of scope of field, principles underlying the development of a program, curricular suggestions on elementary and secondary level, methods and materials for teaching, steps in unit planning and evaluation of the instructional program. No prerequisite.

16 lessons, 3 credits, \$15, Miss Ericson

84 The Physical Education Program in the Elementary and Secondary School. Curricular problems in physical education are studied in relation to the best thinking in general education. Both elementary and secondary levels are considered but individual application may be made to a specific level. No prerequisite.

16 lessons, 3 credits, \$15, Miss Jaeger

Registrations accepted after January 1, 1951.

95 Administration of Physical Education. Study of the care and use of facilities and equipment; organization of the physical education program from the standpoint of classification of the students, appraisal of activities, management of class with particular emphasis upon the program for girls and women. Relationship of the physical education program to the community. No prerequisite.

16 lessons, 3 credits, \$15, Miss Baker

PHYSICS

Joseph Valasek, Ph.D., Professor of Physics
 Fritjof E. Christensen, M.A., Instructor in Physics

4c Elements of Mechanics. Basic principles of mechanics such as Newton's laws of motion, conservation of energy and momentum. The solution of numerous problems will be required. The course prepares the student to continue with other courses in physics or engineering. Prerequisite: trigonometry and higher algebra (preferably college algebra).
 16 lessons, 3 credits, \$15, Mr. Christensen

29 Introduction to Meteorology. Fundamental physical principles and first elements underlying meteorological study, weather map analysis and construction; also local meteorological observation. Prerequisite: algebra and high school physics.
 16 lessons, 3 credits, \$15, Mr. Valasek

POLITICAL SCIENCE

Asher N. Christensen, B.A., Professor of Political Science
 Lennox A. Mills, Ph.D., Professor of Political Science
 G. Theodore Mitau, Ph.D., Associate Professor of Political Science
 George Warp, M.A., LL.B., Assistant Professor of Political Science

Citizenship. See page 58.

Civics. See American Democracy, page 54.

†1 **American Government and Politics I.** Every system of government operates upon the basis of certain fundamental principles and practices. These determine the general contours of the system. The objective of this course, therefore, is to acquaint the citizen with the fundamental principles and practices of the American system. Among the questions for consideration are: What is a constitution? How did the American Constitution come into being? How has it been adapted to changing economic and social conditions? What are the various units of government in the United States? What are their interrelationships? What rights do persons living in the United States possess? How are they protected? How can one play an effective role in government? What is public opinion? What is a political party? How are candidates for office nominated? Who controls elections? How is the electoral process regulated and administered? No prerequisite.

16 lessons, 3 credits, \$15, Mr. Christensen

†2 **American Government and Politics II.** To comprehend government as a process, as something vital and alive, one needs to have an understanding of the nature of the governmental machine and of the various pressures—pushes and pulls—that are the “steam” which determines when, how, and for whom the machinery operates. This course, therefore, is designed to give the student a knowledge both of the formal legal structure and operation of the legislative, executive, and judicial depart-

† Both Course 1 and Course 2 must be completed before credit is allowed for either.

ments of the government and the informal and extra-legal practices that determine its vital character. Among the problems considered are: What is the purpose of a legislature? Should we have unicameral or bicameral legislatures? Where and how does legislation originate? How is a bill passed? What is the effect of the lobby in American politics? How are presidents and governors chosen? Is the administrative branch of government properly organized? Do we need a further extension of the merit principle in the civil service? What is the role of the courts in the American system? What is the effect of judicial review? Do we need a judicial reform? No prerequisite.

16 lessons, 3 credits, \$15, Mr. Christensen

3 American Government and Politics III. The emphasis of this course is not upon structure of American government but upon the functions and activities which it undertakes and upon those factors in our contemporary society which affect the range of these activities. The course is designed to aid the citizen who wishes to be informed on how we conduct our foreign relations; who is responsible for our national defense policies; what are the revenue sources which government may tap in order to finance its manifold activities. The currently discussed problems of the relationships of government to business, to agriculture, and to labor are stressed. Evaluations of social welfare programs, ranging from public educational services and housing programs to old age and unemployment insurance, are included within the subject matter. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Christensen

7c Comparative European Governments. This course deals with the governmental systems and politics of Great Britain, France, Switzerland, Italy, Soviet Russia, Germany and Sweden. Emphasis is placed on the institutional structures, political customs, ideologies, and the problems of administration, and crisis government. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Mitau

Registrations accepted after February 1, 1951.

10c Survey of American Government and Politics. This course is designed to give the student an understanding of the fundamental principles and practices of national, state, and local government in the United States. It includes an analysis of constitutions and charters; citizenship; civil liberties; political parties and public opinion; legislative, executive, and judicial organization and procedures; and of the principal functions and activities of modern American government. No prerequisite.

21 lessons, 4 credits, \$20, Mr. Christensen

25 World Politics. (The world since 1919.) The aim of this course is to explain the significance of contemporary events in Europe and the Far East by a study of their causes. The policies of the Great Powers; the influence of geographic position, the distribution of raw materials, accessibility of foreign markets, imperialism, and armaments. The cause of the failure of the League of Nations; the plans proposed for reconstruction and permanent peace such as the United States of Europe and Anglo-American cooperation. The effect of world events upon American interests. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Mills

80 Principles of Public Administration. This course concerns the activities of the people who administer our laws. Emphasis is on methods, theories and problems of organizing governmental administration and on the organization of people in administrative activities. Attention is paid to such problems as coordination of administrative groups and activities, relations between central offices and the field and the problems of inertia and incentive in administration. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Warp

PSYCHOLOGY

Wendell White, Ph.D., Associate Professor of Psychology

1c Application of Psychology to Living. This course is devoted to psychology in personal relationships and in the achievement of mental health. It centers, for the most part, around our fundamental needs—the source of all our actions and satisfactions—and it presents principles highly applicable in the life of every person. This course has no prerequisite, and it may be taken with the same satisfaction before or after Psychology 1-2.

16 lessons, 3 credits, \$15, Mr. White

†1 General Psychology I. The study of the beginnings of behavior, its development, and the factors that influence its development. Methods of investigation. Individual differences. No prerequisite.

16 lessons, 3 credits, \$15, Mr. White

†2 General Psychology II. Further study of some of the topics taken up in General Psychology I, and orientation of the student to problems of psychology in general. Prerequisite: General Psychology I.

16 lessons, 3 credits, \$15, Mr. White

Child Psychology. See page 18.

Social Psychology. See page 51.

READING

Louise Klohn, M.A., Instructor in English

1c How to Read. A course for those who want to learn to read well, to raise the standard of their reading, and to acquaint themselves with the classics which everyone should know. The books on the reading list have been selected from the world's great stories and are treated in a way to help the reader discuss intelligently with others the problems of today. Of interest to prospective college students, club women, book reviewers, writers, teachers, and other professional people, as well as to homemakers and those in the business world who realize the opportunities that a command of reading and intelligent conversation has to offer. No prerequisite.

12 lessons, 2 Extension credits, \$10, Miss Klohn

† Both courses must be completed before credit is allowed for either.

ROMANCE LANGUAGES

(See pages 32, 39, 52.)

RUSSIAN

Pearl C. Niemi, Ph.D., Instructor in Russian

1 Beginning Russian I. A course preparing for a reading and writing knowledge in the Russian language. The students will be acquainted with the Russian script; pronunciation; the essentials of grammar; translations from Russian and into Russian; interpretation of easy Russian short stories. No prerequisite.

27 lessons, 5 credits, \$25, Miss Niemi

2 Beginning Russian II. After fulfilling the requirements of the course, the students will be able to read, with a dictionary, any kind of Russian texts—newspapers, professional literature, fiction. A fair ability of written expression should be achieved. Prerequisite: Course 1.

27 lessons, 5 credits, \$25, Miss Niemi

SALESMANSHIP

Edward Birnberg, B.A., Instructor in Business

1c Salesmanship. Elementary course in the art and techniques of effective salesmanship. Major emphasis placed on practical aspects with various case histories presented.

16 lessons, 3 Extension credits, \$15, Mr. Birnberg

SCANDINAVIAN LANGUAGES

(See pages 44, 53.)

SOCIOLOGY

Elio Monachesi, Ph.D., Professor of Sociology

Douglas G. Marshall, Ph.D., Associate Professor of Sociology and Social Work

Clarence Johanson, B.A., Instructor in Sociology

Reginald Robson, B.Sc.(Econ.), Instructor in Sociology

1 Introduction to Sociology. A study of the characteristics of human group life. An analysis of the factors associated with the development of human group life and man's social environment; the structure of the social environment and its influence upon the individual's behavior; the processes involved in social change and the social problems that accompany social change. A survey of the fundamental social institutions such as the family and the church; the development and decline of social institutions; change in the institutional functions and social disorganization. This course is intended to introduce the student to the fundamental concepts of sociology and to give him a better understanding of the contemporary social order. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Monachesi

2 Intermediate Sociology. A study of personality, human behavior, group interaction, social institutions and social change, with special reference to contemporary American conditions. The problem of individual adjustment in a complex society is explored, and a large section of the course is devoted to a detailed consideration of the color-caste system and its impact upon minorities. Prerequisite: Sociology 1.

16 lessons, 3 credits (an additional 2 credits will be allowed on completion of a satisfactory term paper), \$15 or \$25, Mr. Robson

14 Rural Sociology. A study of rural society, dealing with the relationships of rural and urban individuals and groups. A presentation of such factual data as may be considered fundamental to the understanding of the problems of rural life. Prerequisite: Sociology 1 or permission of instructor.

16 lessons, 3 credits, \$15, Mr. Marshall

49 Social Problems. A study of factors underlying the inability of many individuals and groups to satisfy their basic wants within the framework of existing social institutions; a consideration of individual and institutional limitations giving rise to such problems as juvenile delinquency, criminality, mental illness, industrial strife, family discord, and community disorganization. Prerequisite: Sociology 1 or consent of instructor.

16 lessons, 3 credits, \$15, Mr. Johanson

120 Social Psychology. An analysis of the social aspects of personality growth and personality interaction. Personality motivation and adjustment in the group situation. Prejudice, public opinion, propaganda, leadership are analyzed. Psychological aspects of social problems such as personality disorganization, crowd behavior, social control, family adjustment, and war. Prerequisite: Courses 1 and 15 credits in social science, education, philosophy, psychology, or child welfare.

16 lessons, 3 credits, \$15, Mr. Johanson

123 Interaction of Racial and Cultural Groups in America. A consideration of historical and psychological factors in group prejudice; the concept of minority group, Caucasoid immigrant groups; non-Caucasoid groups in the United States with special reference to the Negro; adjustment and action programs. Prerequisite: Courses 1 and 15 credits in social science, education, philosophy, psychology, or child welfare.

16 lessons, 3 credits, \$15, Mr. Johanson

141 The Family. Origin of family life; variability and change of family institutions and mating customs; contemporary parent-child relationships; adolescence; mate finding; marital adjustments; divorce and other family problems; prediction of marital success; theories of family reform. Prerequisite: Sociology 1 or its equivalent.

16 lessons, 3 credits, \$15, Mr. Johanson

SPANISH

Emmert M. Brackney, Ph.D., Associate Professor of Romance Languages
 James Cúneo, Ph.D., Associate Professor of Romance Languages
 Rodolfo O. Floripe, Ph.D., Instructor in Romance Languages
 Robert E. Luckey, M.A., Instructor in Romance Languages
 Richard A. Narváez, M.A., Instructor in Romance Languages

A Spanish pronunciation record prepared by the Romance Languages and Correspondence Study Departments may be purchased for \$1.50. Not required but advised.

1 Beginning Spanish I. Grammar and reading. In this course stress will be laid upon grammar, accurate translation, and composition. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Cúneo, Mr. Luckey

2 Beginning Spanish II. Continuation of Course 1, which is prerequisite.

27 lessons, 5 credits, \$25, Mr. Cúneo, Mr. Luckey

3 Intermediate Spanish I. Review of grammar; composition, reading of modern Spanish text. Prerequisite: Course 2 or equivalent.

27 lessons, 5 credits, \$25, Mr. Brackney

4 Intermediate Spanish II. A continuation of Course 3 which is prerequisite.

27 lessons, 5 credits, \$25, Mr. Brackney

7 Latin-American Culture (in English). This course offers a panoramic view of Latin-American culture. It attempts to interpret the land, the people, and their history; the political, social, and economic organization; the cultural and literary traditions in such a way as to give the North American a unified picture of the twenty countries of Latin America. Readings in English; Spanish not necessary. No prerequisite.

16 lessons, 3 credits, \$15, Mr. Cúneo, Mr. Floripe

8 Latin-American Culture (in English). A continuation of Spanish 7. No prerequisite. (In preparation.)

16 lessons, 3 credits, \$15, Mr. Cúneo

52 Spanish Commercial Correspondence. A course consisting of specialized material in Spanish commercial correspondence. It aims to give the student sufficient knowledge of commercial Spanish to enable him to understand and to handle commercial correspondence in Spanish. It includes the study of the main parts of a Spanish letter, the envelope, the various kinds of Spanish commercial letters, models of letters and commercial forms, commercial documents, telegram and cablegram, Spanish abbreviations used in Spanish correspondence, and business vocabulary. The course is a part of a more complete course which includes the study of Spanish composition and the discussion of subjects closely related to the commercial activities such as Latin-American monetary units, banking organization and practices, and foreign trade. Prerequisite: Spanish 3.

27 lessons, 5 credits, \$25, Mr. Cúneo, Mr. Floripe

53 Elementary Spanish Composition. Connected prose composition dealing with everyday life in Spain. The aim is the ability to write Spanish. Prerequisite: Course 4 or equivalent.

16 lessons, 3 credits, \$15, Mr. Narváez

60 Advanced Spanish Composition. A continuation of Course 53 which is prerequisite.

16 lessons, 3 credits, \$15, Mr. Narváez

SPEECH

David W. Thompson, Ph.D., Assistant Professor of Speech
Helen T. Dreher, B.S., Instructor in Vocabulary Building

1c Vocabulary Building. A practical course designed to increase the student's speaking and reading vocabularies; presentation and discussion of words; exercises; reading lists. The lessons will stimulate the student's interest in the proper use and etymology of the English language; provoke word collecting and suggest substitutes for overworked words. A recommended reading list will be given. No prerequisite.

16 lessons, 3 Extension credits, \$15, Mrs. Dreher

115 Playwriting. Reading assignments as an introduction to dramatic form and content. Practice in writing dramatic plots, characters, themes and dialog. The writing exercises will include scenario, rough draft, and final revision of a one-act play (approximately fifteen typed pages or thirty minutes in playing time). Prerequisite: Speech 31 or permission of instructor.

16 lessons, 3 credits, \$15, Mr. Thompson

Registrations accepted after October 1, 1951.

180c Independent Playwriting. Specifically designed for advanced students. The student is given complete freedom. Plays in any stage of development will receive detailed criticism. In addition all plays will be considered for production at the University Theatre. It is to the student's advantage that he submit a sample of his playwriting for the approval of the instructor before actually registering for this course.

16 lessons (two full-length plays or approximately the same amount of writing made up of shorter dramatic forms), 3 Extension credits, \$15, Mr. Thompson

SWEDISH

Alrik Gustafson, Ph.D., Professor of Scandinavian and Chairman, Department of Scandinavian

7 Beginning Swedish I. Grammar and composition; selected readings in easy prose and verse. No prerequisite.

27 lessons, 5 credits, \$25, Mr. Gustafson

8 Beginning Swedish II. A continuation of Course 7, which is prerequisite.

27 lessons, 5 credits, \$25, Mr. Gustafson

Note. Courses in intermediate, advanced, and Swedish literature are also offered. Interested students should write to the Correspondence Study Department for information.

HIGH SCHOOL COURSES

(For courses in agriculture, see page 11.)

AMERICAN DEMOCRACY

Kopple Friedman, Ph.D., Instructor in Civics

1 Problems of American Democracy.

Part A. This course is equivalent to the first semester of what is customarily offered as the social studies course in the twelfth grade. It is intended to provide the basis for an intelligent approach to problems of American life, mainly of a civic or political nature. Emphasis is placed on the relation of these problems to the individual. No prerequisite.

20 lessons, ½ entrance unit, \$19.50, Mr. Friedman

Part B. This course is equivalent to the second semester of what is customarily offered as the social studies course in the twelfth grade. It is devoted to problems of American life, particularly of a social and economic nature. No prerequisite.

20 lessons, ½ entrance unit, \$19.50, Mr. Friedman

BOOKKEEPING

Reuel Lund, Ph.D., Assistant Professor of Accounting

1 **Bookkeeping.** The form, content, and purpose of various types of bookkeeping records; the adaptation of the information in the records to its utilization in financial statement; and the form, content, and interpretation of financial statements; the application of record keeping to a few common types of business enterprise. No prerequisite.

20 lessons, ½ entrance unit, \$19.50, Mr. Lund

ENGLISH

Louise Klohn, M.A., Instructor in English

Mary Lynne Nuessle, B.A., Instructor in English

1 **English Composition A.** This course, and the following, are suited to the needs of those persons who do not have a good foundation in English and, hence, need training in the correct use of the language. It covers that part of the work in composition usually given in the freshman year in high schools. It gives practice in writing compositions on simple subjects, with special attention to the development of sentence structure and a unified paragraph; special drill to overcome errors in grammar, spelling, punctuation, etc.; and training in the use of the dictionary. No prerequisite.

20 lessons, ½ entrance unit, \$19.50, Mrs. Nuessle

2 English. Tenth grade English.

Part A. This course is equivalent to the first semester of high school English at the tenth grade level. It is intended to deal with problems concerning youth in the home and in the community. By reading the literature selections and participating in the discussions by means of the written assignment, you will have an opportunity to study people in a variety of situations. These problems may not be yours, but you will note some similarities. One of the objectives is to gain a better understanding of the people in the world in which we live. The course is based on literature, but is actually a combination of literature and composition. The two are well coordinated so the reading selections provide the basis for assignments in composition. No prerequisite except ninth grade English or equivalent.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mrs. Nuessle

Part B. This course is a continuation of Part A, and is equivalent to the second semester of tenth grade English. Literature again is emphasized, but composition is an essential part of the course. No prerequisite except the equivalent of first semester tenth grade English.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mrs. Nuessle

3 English Composition C. This course covers the composition work of the junior year of the high school. Composition forms a large part of the course. Emphasis is placed on gathering material and organizing it into longer themes than those of the first year. Drill in spelling, punctuation, etc., are again included. These drills cover more difficult points in grammar than those studied in the first year. Prerequisite: Course 2 or equivalent.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mrs. Nuessle

4 English Composition D. This course is a continuation of Course 3, and corresponds to high school senior English composition. Prerequisite: Course 3 or equivalent.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mrs. Nuessle

5 English Literature A. The object of this course is to arouse in the student an interest in the reading of good literature and to assist him to a knowledge and appreciation of some of the masterpieces in the various forms of literature. It includes the study of a volume of short stories, a volume of poetry, Shakespeare's *Merchant of Venice*, and Scott's *Ivanhoe*. The reading of an additional volume of each type is required of the student and questions are used to assist as well as to test his understanding of the works read. The course corresponds to the literature part of high school freshman English. No prerequisite.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mrs. Nuessle

7 English Literature C. This is a course in American literature. The works of well-known American authors, including those of recent date, are studied according to themes illustrating various aspects of the American heritage. The course aims to inspire an appreciation of literary talent as it has developed within our democratic society, as well as to building an understanding of the growth of American ideas. The course corresponds to the literature half of high school junior English.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mrs. McDonald

8 English Literature D. This course, corresponding to high school senior English literature, consists of a study of significant world literature with emphasis upon English contributors to our literary heritage. The course aims to develop understandings of common human experiences and ideas as expressed in the great literature of many lands and times. It also aims to stimulate interest in further reading of good literature.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mrs. McDonald

Preparatory English. A course in the simple fundamentals of correct English, intended to give additional drill to high school graduates who need further preparation for college English. No prerequisite.

12 lessons, no credit, \$10, Miss Klohn

FRENCH

1 Beginning French I. 1 entrance unit. See page 32.

2 Beginning French II. 1 entrance unit. See page 32.

3 Intermediate French I. 1 entrance unit. See page 32.

4 Intermediate French II. 1 entrance unit. See page 32.

GERMAN

1 Beginning German I. 1 entrance unit. See page 33.

2 Beginning German II. 1 entrance unit. See page 33.

3 Beginning German III. 1 entrance unit. See page 33.

HISTORY

George McCune, Ph.D., Professor of Social Studies

1 American History. Similar to the course usually given in the fourth year of high school.

Part A. The settlement and growth of the colonies in America; the development of friction between colonies and homeland leading to the Revolution; the Constitution—its framing and operation; political history, 1789 to the present, with emphasis on the growth of democracy in government. No prerequisite.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. McCune

Part B. Economic development of the United States—agricultural development and problems; the Industrial Revolution in America; the growth of big business; relations between government and business; the development of American ways of life—customs, thought, and culture; America's foreign relations and foreign policy, 1789 to the present; problems of the United States today. No prerequisite.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. McCune

2 World History. Corresponds to the second or third year of high school course. Survey of the development of civilization from prehistoric man to the present. Part A through 1815, stresses oriental, Greek, Roman, and medieval civilizations, the Reformation, rise of national states, co-

lonial rivalry, the French, the Revolution, Napoleon and the Congress of Vienna. Part B stresses the Industrial Revolution, modern democracy in the various countries of Europe, imperialism, World War I, postwar problems and social, economic, and political conditions of the world today. No prerequisite.

Part A, 20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. McCune

Part B, 20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. McCune

LATIN

1 Beginning Latin I. 1 entrance unit. See page 41.

2 Beginning Latin II. 1 entrance unit. See page 41.

3 Intermediate Latin Reading. 1 entrance unit. See page 41.

4 Selections from Latin Prose and Poetry. 1 entrance unit. See page 41.

MATHEMATICS

Immanuel C. Fischer, M.S., Assistant Professor of Engineering

1 Elementary Algebra A. A beginning course. Treats positive and negative numbers; addition, subtraction, multiplication, and division of monomials and polynomials; simple equations in one unknown quantity; elementary special products and factoring; highest common factor and lowest common multiple. Prerequisite: common school arithmetic.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. Fischer

2 Elementary Algebra B. Treats addition, subtraction, multiplication, and division of fractions including complex fractions; equations in one unknown quantity which involve fractions; graphical representation; simultaneous equations of the first degree; square roots and quadratic surds; quadratic equations in one unknown quantity. Prerequisite: Course 1.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. Fischer

3 Plane Geometry A. The work of this course is elementary geometry. Rectilinear figures and the circle, with the miscellaneous original exercises and some elementary construction problems. Prerequisite: Courses 1 and 2.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. Fischer

4 Plane Geometry B. This course treats proportion, similar triangles, proportional properties of line segments, proportional properties of chords and secants, trigonometric ratios, areas of polygons, regular polygons and circles. Prerequisite: Course 3.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. Fischer

9c Higher Algebra. Review of elementary algebra, linear equations, determinants, ratio and proportion, variation, quadratic equations, graphs, progressions, binomial theorem. Prerequisite: one year of elementary algebra.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. Priester

10c Solid Geometry. Standard theorems and exercises. Practice in special proofs and original exercises to develop imagination and initiative. Prerequisite: Plane Geometry A or B or one year of high school plane geometry.

20 lessons, $\frac{1}{2}$ entrance unit, \$19.50, Mr. Fischer

Note—Courses 9c and 10c meet the entrance requirements in mathematics of the Institute of Technology.

NORWEGIAN

- 1 **Beginning Norwegian I.** 1 entrance unit. See page 44.
- 2 **Beginning Norwegian II.** 1 entrance unit. See page 44.
- 3 **Intermediate Norwegian.** 1 entrance unit. See page 44.
- 4 **Advanced Norwegian.** 1 entrance unit. See page 44.

SPANISH

- 1 **Beginning Spanish I.** 1 entrance unit. See page 52.
- 2 **Beginning Spanish II.** 1 entrance unit. See page 52.
- 3 **Intermediate Spanish I.** 1 entrance unit. See page 52.
- 4 **Intermediate Spanish II.** 1 entrance unit. See page 52.

SWEDISH

- 7 **Beginning Swedish I.** 1 entrance unit. See page 53.
- 8 **Beginning Swedish II.** 1 entrance unit. See page 53.
- 9 **Intermediate Swedish.** 1 entrance unit. See page 53.

CITIZENSHIP

Ivan Kubanis, B.A., Teaching Assistant in Political Science

Citizenship. This is a course given by the Extension Division of the University of Minnesota in cooperation with the public schools and the Immigration and Naturalization Service. It is intended to assist the foreign-born applicant for citizenship in acquiring a better understanding of the American Constitution and Government. It is primarily designed for the rural alien to whom a class in such citizenship instruction is not available. Enrolment is limited to applicants for naturalization. All persons wishing to enroll should write to the Educational Service Office, Room 919 New Post Office Building, Chicago 7, Illinois.

21 lessons, no credit, \$3.50, Mr. Kubanis

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Services of the General Extension Division

Evening and Special Classes

This department offers more than 400 collegiate and special interest courses for residents of the Twin City area and Duluth. Courses are provided for those interested in degrees, certificates, occupational advancement, and hobbies. The part-time arrangement makes Extension evening classes attractive to the adult population. A current bulletin is available from the General Extension Division, 54 Nicholson Hall, University of Minnesota, Minneapolis 14.

Center for Continuation Study

provides short special courses in business and professional fields. Information is available by writing: Director, Center for Continuation Study, University of Minnesota, Minneapolis 14.

Community Program Service

offers concerts, lectures, and assembly programs and maintains a play library. For information write: Community Program Service, 229 Northrop Auditorium, University of Minnesota, Minneapolis 14.

University Station KUOM

brings Minnesota University of the Air, Minnesota School of the Air, musical and other educational programs to the Upper Midwest. A schedule is obtainable from: KUOM, University of Minnesota, Minneapolis 14.

Audio-Visual Extension Service

supplies sound motion pictures and slides to groups and individuals. Information available at: Audio-Visual Extension Service, 230 Northrop Auditorium, University of Minnesota, Minneapolis 14.

Municipal Reference Bureau

cooperates with the League of Minnesota Municipalities in study of city and village affairs. Information is available at: Municipal Reference Bureau, 15 Library Building, University of Minnesota, Minneapolis 14.

State Organization Service

is a new department organized in 1949 to assist voluntary non-profit associations and societies in communities and on a state-wide level in their task of dispensing necessary and timely information on international and domestic affairs and on important cultural subjects. For such groups it is prepared to furnish secretarial and administrative services and help in program preparation and presentation. For full information write to: Director, State Organization Service, 104 TSMc, Washington and 15th Avenues Southeast, University of Minnesota, Minneapolis 14.

The Bulletin

of the

UNIVERSITY

OF

General Extension Division

MINNESOTA

Extension Classes

1951-1952

LIV-38

CALENDAR

1951

September	17	Monday	Fall registration begins
September	29	Saturday	Last day for registration without late fee
October	1	Monday	Fall quarter and semester classes begin
October	13	Saturday	Last day for transfer without late fee
December	17	Monday	Winter quarter registration begins
December	22	Saturday	Christmas recess begins. Fall quarter closes

1952

January	7	Monday	Fall semester resumes. Winter quarter begins
January	28	Monday	Spring semester registration begins
February	8	Friday	Fall semester closes
February	9	Saturday	Last day for registration without late fee
February	11	Monday	Spring semester begins
February	23	Saturday	Last day for transfer without late fee
March	17	Monday	Spring quarter registration begins
March	22	Saturday	Winter quarter closes
March	31	Monday	Spring quarter begins
June	6	Friday	Spring semester closes
June	14	Saturday	Spring quarter closes

Opening and closing dates for classes on other than semester or quarter basis are indicated below description of each class. Registration should be made during the two weeks preceding the opening of such classes; the customary privilege fees for late registration will be in effect after the opening session of all these classes. See page 2 for registration regulations.

EXTENSION OFFICES

Minneapolis Campus: Ground floor, southeast entrance, Nicholson Hall, University of Minnesota, Lincoln 8791, Midway 3965

Minneapolis (Downtown): 690 Northwestern Bank Building, Marquette Avenue and Sixth Street South, Main 0624

St. Paul: Extension Center, 500 Robert Street, Cedar 6175

Duluth: 504 Alworth Building, 7-1317

SPECIAL OFFICE HOURS

Campus Office: September 17 through October 6 and January 28 through February 16: **weekdays**, 12:00 to 8:15 p.m.; **Saturdays**, 9:00 a.m. to 1 p.m.

Minneapolis Office: September 17 through September 28 and January 28 through February 9: **weekdays**, 12:00 to 8:15 p.m.; **Saturdays**, 9:00 a.m. to 1:00 p.m.

St. Paul Office: September 17 through October 6 and January 28 through February 16: **weekdays**, 12:00 to 8:15 p.m.; **Saturdays**, 9:00 a.m. to 1:00 p.m.

REGULAR OFFICE HOURS

Campus Office: Monday through Thursday, 8:00 a.m. to 8:15 p.m.; Friday, 8:00 a.m. to 5:00 p.m.; closed Saturdays.

Minneapolis and St. Paul Offices: Weekdays, 8:30 a.m. to 5:00 p.m.; Saturdays, 9:30 a.m. to 12:00 noon.

Special summer hours or closings may be in effect from June 1 to September 15. Consult offices for schedules.

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BOARD OF REGENTS

The Board of Regents is composed of The Honorable Ray J. Quinlivan, St. Cloud, First Vice President and Chairman; The Honorable George W. Lawson, St. Paul, Second Vice President; The Honorable James F. Bell, Minneapolis; The Honorable Daniel C. Gainey, Owatonna; The Honorable Richard L. Griggs, Duluth; The Honorable J. S. Jones, St. Paul; The Honorable Lester A. Malkerson, Minneapolis; The Honorable Charles W. Mayo, Rochester; The Honorable E. E. Novak, New Prague; The Honorable A. J. Olson, Renville; The Honorable Herman F. Skyberg, Fisher; and The Honorable Sheldon V. Wood, Minneapolis.

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Correspondence Study, F. Lloyd Hansen, 251 Nicholson Hall
Evening and Special Classes, Huntington Miller, 54 Nicholson Hall
Municipal Reference Bureau, Clarence C. Ludwig, 15 Library Building
Radio Station KUOM, Burton Paulu, 1 Eddy Hall
State Organization Service, William C. Rogers, 104 Third Temporary, South of Mines

GENERAL EXTENSION DIVISION

Evening and Special Classes—Twin Cities Area

REGISTRATION REGULATIONS

The following regulations apply to veteran as well as nonveteran students unless otherwise indicated. In addition all service veterans should read **SPECIAL REGISTRATION INFORMATION FOR VETERANS** on page 3.

Registration dates, offices, and office hours are indicated inside the front cover of this bulletin; registration may also be made by mail **EXCEPT BY VETERANS**. Registration forms will be sent to nonveterans upon request to any Extension office.

Eligibility

The University's Extension classes are open to everyone who can handle them successfully. Service veterans may register under the G.I. Bill. See Special Information Regulations for Veterans, page 3. See page 6 for information as to "prerequisites." If you are in doubt as to your qualifications for a course, you should consult the class instructor or an Extension Division adviser before registering. If this is not possible we recommend that you register anyway, to avoid payment of late registration fee, and consult the instructor at the first class session. If the instructor decides that you are not qualified, or that the course does not meet your needs, a note from him to this effect, submitted with your notice of cancellation (see Cancellations and Refunds, below) will bring you a full refund, or a transfer to another class will be accepted without penalty during the first two weeks of classes.

Fees

The full amount of the tuition and other special fees is payable at the time of registration. Checks or money orders should be drawn for the exact amount due and made payable to the University of Minnesota. The fee for each class is designated in the listing of the class in this bulletin.

Registration Periods

All registrations should be made during the two weeks preceding the first week of a class term (semester, quarter, or special). Registration will be permitted through the first three weeks of a semester and the first two weeks of a quarter or special term, subject to certain regulations and fees as set out below. No registrations will be accepted thereafter without special permission of the Students' Work Committee.

Late Registrations

All initial registrations received after the opening of a class term will be considered "late registrations" and will be subject to a privilege fee of \$2 through the first week of classes and \$3 thereafter. The time of registration by mail will be determined by the postmark. These special fees are not included in the privileges of the G.I. Bill and must be paid by the veteran personally.

Additions and Transfers

Classes may be added to an initial registration and transfers will be permitted without penalty through the first two weeks of a semester or quarter. During the third week additions or transfers will be permitted only upon presentation of a **Special Registration Permit** endorsed by the instructor of the class which the student wishes to enter. A privilege fee of \$2 will be required (veterans included) to compete all such late additions or transfers. No classes may be added or transfers made after the third week of a class term without special permission of the Students' Work Committee.

Auditors

A student who does not expect to do all the required work of a class may register as **auditor** by writing "Aud." in the credit column of the registration form, or by asking his instructor to record him as an auditor any time before the final examination. Auditors' status carries no credit. Auditors pay the same fee as other students. **No veteran** may audit any class, however, without written permission from the Extension Veterans Office.

Cancellations and Refunds

Notice of cancellation and application for refund, accompanied by a fee receipt, must be in writing and submitted by the student to one of the Extension Division offices. **The effective date of cancellation** for the purpose of calculating refunds will be that on which notice is received, regardless of the date of last attendance.

Full refund will be made only when class offerings are changed or canceled by the Extension Division, or in certain cases upon certification of the instructor (see Eligibility, page 2).

Partial refunds, in accordance with general university regulations, will be made for all other cancellations which occur during the first half of the class term, provided proper notice is received. **The scale of refunds is available for inspection at any Extension Division office.**

No refunds can be made to students after the first half of the class sessions have been held.

Veterans please refer to **Special Registration Information** section below for additional notes regarding cancellations by veterans.

Maximum Work Load

The maximum amount of Extension work, including both evening classes and correspondence study courses, to be carried by students employed full time is 10 credit hours. Permission to exceed this maximum load must be received from the Students' Work Committee.

Present or Former University Day-School Students

A student who is regularly registered for day class work in any unit of the University may register for Extension classes only with the permission of the dean or head of his unit.

A student who has been dropped from any unit of the University may not register for Extension work without written permission from the dean or head of that unit.

SPECIAL REGISTRATION INFORMATION FOR VETERANS

New Extension Veteran Students

Veterans under P.L. 346 using their educational benefits for the first time at the University of Minnesota must, when registering for Extension classes only, present a valid Certificate of Eligibility. Veterans who are basically enrolled in another educational institution, or who are in on-the-job training under P.L. 346, must present an Authorization for Related Instruction. Rehabilitation veterans under P.L. 16 must present a Letter of Authorization at each time of registration.

Former University of Minnesota Veteran Students

Veterans using educational benefits under P.L. 346 who have previously submitted valid Certificates of Eligibility to the University of Minnesota need not secure additional authorization for registration in Extension classes unless they have been in attendance at some other educational institution or training

establishment since attending the University or unless they have received an undergraduate degree from the University of Minnesota, **provided** they have satisfied the regulations established by the July 25, 1951, deadline. Veterans basically enrolled in another educational institution must present an Authorization for Related Instruction at each time of registration. On-the-job trainees under P.L. 346 who have previously submitted an Authorization for Related Instruction to the University of Minnesota need not secure additional authorization for registration provided their Extension classes are related to their training objective, and provided the regulations established by the July 25, 1951, deadline have been satisfied. Rehabilitation veterans under P.L. 16 must present a Letter of Authorization at each time of registration. **No veteran registration will be accepted if there is any doubt as to the validity of the Certificate of Eligibility or Authorization for Related Instruction presented, or now on file.**

July 25, 1951, Deadline for Veterans Explained

1. Educational and training benefits under Public Law 346 were terminated for all veterans on July 25, 1951, **unless** at least one class was satisfactorily completed during the spring semester, 1951, or the spring quarter, 1951, or the Summer Session, 1951. Exceptions are as follows:

- a. Veterans whose date of discharge was later than July 25, 1947, are not affected by the deadline of July 25, 1951. They are eligible to begin or to continue training until their **individual** deadline dates (four years from date of discharge) are reached.
- b. Veterans whose education or training was interrupted because of recall to active military duty may continue with their education or training when discharged, **provided** they do so within a reasonable time.
- c. Veterans (Rehabs) eligible for education and training under the Vocational Rehabilitation Act (P.L. 16) are **not affected** by the July 25, 1951, deadline.

2. Any veteran eligible to continue his training after July 25, 1951, or (when applicable) after his individual deadline date has been reached, must register for and satisfactorily complete at least one class during each semester or quarter of the 1951-52 regular school year in order to keep his eligibility alive. **This procedure must be followed each regular school year until his eligibility is exhausted.** For example, any veteran whose date of discharge was July 25, 1947, or earlier, if eligible to continue with his education or training after July 25, 1951, (see paragraph 1) must register during the fall quarter or semester 1951 and for each subsequent quarter or semester during the regular school year. If he has sufficient eligibility time he may continue in the fall quarter or fall semester, 1952, etc. **He can be in an interrupted status only during customary summer vacation months.**

3. Any veteran eligible to continue his training after July 25, 1951, or (when applicable) after his individual deadline has been reached cannot change his basic course of education and training after this date without approval of the Veterans Administration.

Subject to the provisions of paragraphs 1, 2, and 3 listed above, veterans eligible for education and training under the G.I. Bill (P.L. 346) or the Vocational Rehabilitation Act (P.L. 16) may register for Extension classes at the University of Minnesota upon establishment of proper authorization from the Veterans Administration. The expenses of tuition, fees, books, and supplies for these classes will be paid by the Veterans Administration. In certain cases, depending on income, number of dependents, and credit load being carried, veterans under P.L. 346 may be eligible to receive partial or full subsistence payments from the Veterans Administration.

All Veteran Students

No veteran will be accepted for registration in Extension classes without proper authorization from the Veterans Administration. In certain cases, when necessary to avoid payment of late registration fees, a cash registration will be accepted with full refund privileges, pending receipt of a Certificate of Eligibility or Authorization for Related Instruction. Because of the detailed Report of Registration of Veterans which must be submitted to the Veterans Administration, veterans must register in person at some General Extension Division office. **No registration by mail will be accepted from any veteran.** This rule applies to former Extension veteran students as well as new enrollees.

Cancellation of Classes by Veterans

In addition to the regulations governing cancellations listed on page 3 veterans are urged to report all cancellations immediately to the Veterans Office, General Extension Division, in order to protect their eligibility status. **This office will notify the Veterans Administration of the cancellation as of the date received.** Regulations require that in the case of cancellations all books, supplies, and equipment issued must be turned in to one of the General Extension Division offices. Veterans failing to abide by this regulation will be personally liable for payment for such materials.

Failure of Veterans Administration to Approve Payment for Registrations

The United States Veterans Administration makes the regulations which govern the conditions under which veterans may be authorized to pursue educational or vocational training. The University of Minnesota accepts only those Extension registrations which, in the opinion of the Veterans Office, have been properly authorized by the United States Veterans Administration. However, because of differences in interpretation of the regulations and procedures affecting education and training entitlement, Extension registrations have occasionally been ruled invalid and reimbursement for the costs billed subsequently refused by the United States Veterans Administration. **Therefore, in the event the United States Veterans Administration rules a veteran Extension registration invalid, the General Extension Division has no recourse other than to bill the veteran personally for such tuition, fee or book, supply, and equipment costs as may have been incurred.**

Veterans Office

The Veterans Office, Room 56 Nicholson Hall, Lincoln 8791, Midway 3965, should be consulted on all problems related to Veterans Administration authorizations for educational training and Extension registration procedures. This office has been delegated the responsibility of aiding veterans in the use of their G.I. Benefits. **Do not hesitate to use the services of the Veterans Office whenever your educational and training benefits are involved.**

GENERAL INFORMATION

How to Use This Bulletin for Registering

The listing of each class in this bulletin should in most cases give you all the information you need for filling out your registration forms. Most classes appear under their appropriate department or subject heading; where several classifications are possible, cross references will usually be given. Use of the index at the back of the bulletin plus a little search will usually determine whether the class you are seeking is being offered.

The first line or two of the listing gives you the class number, if any, the title, the number of credits, and the cost per term (semester, quarter, or special) plus special fees, if any. All numbered listings are university credit classes and are the same as those of corresponding day classes or have been approved for Extension use by the department concerned. Other classes are not numbered

and are indicated as for "Extension credit"; any of these classes may be applicable toward an appropriate Extension Certificate (see Extension Certificates, page 9). A few class listings are daggered (†), others are continuation classes, i.e., run for two or three semesters or three quarters; for special information concerning registration in these classes see **Daggered Listings** and **Continuation Classes** below.

The description of the course content follows. If the class is repeated each semester, or if the enrolment is limited, it is so indicated at the end of the description. The course prerequisites, if any, terminate the description (see **Prerequisites** below).

The final items in the listing give the term in which it is to be offered, the day of the week and opening time, the location and the instructor, if assigned. Where there is more than one section two schedules are given.

Classes listed in this bulletin may be canceled because of insufficient enrolment.

Classes not listed in this bulletin will, when possible, be organized on petition from a sufficient number of persons.

Prerequisites

Prerequisites are stated for information, not as obstacles. Many Extension classes list no prerequisites, and are open to all who can profit by them. Other classes are of such a nature that they cannot be carried through without certain previous study. The prerequisites listed for the latter are those which, in the judgment of the department concerned, should be met by students who expect to receive university credit for the class. In many cases a reasonable equivalent of related study, training, or experience will be accepted. If you are in doubt as to your status, consult the instructor at or before the first class session. See paragraph on **Eligibility in Registration Regulations** section on page 2 for special refund or transfer privileges in such cases.

Daggered (†) Listings

The units of classes followed by the dagger symbol must be taken in sequence and credit cannot be received for the first unit until the second is completed. Students who have not completed the first unit of a daggered course at the University but who believe they are qualified to enroll in the second unit must receive permission of the Students' Work Committee before registering for the second unit.

Continuation Classes

Unless otherwise indicated (see, for instance, special notes under **History** and **Art** headings) units of classes which run for two semesters should be taken in sequence and the first unit of the course should be considered as prerequisite to the second unit even though the two units are listed together with "no prerequisite" indicated (see French 1-2, or Machine Design I-II). Students who believe they have the equivalent of the first unit in work done elsewhere, or in practical experience, should consult the instructor either before registering or at the first class session to be sure they have the necessary background to qualify for the advanced unit.

Credits

Validity—The credits listed in the class description are quarter credits, notwithstanding the fact that regular Extension terms are organized as semesters rather than as quarters. Unless these credits are called Extension credits, they are understood to be valid toward a degree in the college under which the class concerned is organized; Extension credits count only toward Extension certificates, not toward degrees. Note that classes in certain subjects carry less university credit in Extension than do the corresponding day school classes owing to the limited number of class hours and extent of course content of the Extension class (i.e., Econ. 6-7 carries 6 credits in Extension against 10

credits in the College of Science, Literature, and the Arts and the School of Business Administration). The successful completion of these subjects in Extension, however, does meet the prerequisite requirements of advanced subjects in both Extension and day school.

Transfer—Credits may sometimes be transferred from one college to another, or from another accredited institution to this University, but requests for such transfer are always ruled on individually and according to their merits; consult the Students' Work Committee.

Established by special examination—A student who, by independent study or by experience, has gained knowledge which he believes to be equivalent to that covered by a particular Extension class may establish credit for such class by passing a special examination on the subject matter covered by the class. The fee for such special examination is \$5. In the same way, a student may establish credit for work done at an unaccredited institution. Arrangements for special examinations are made through the Students' Work Committee.

Residence—Credits earned in undergraduate Extension classes in Minneapolis, St. Paul, and Duluth are "resident" credits.

Graduate—A graduate student may, upon the approval of his graduate adviser, petition the dean of the Graduate School to have transferred to his graduate record not more than six quarter credits under Plan A or nine quarter credits under Plan B in courses numbered 100 and above offered by the Extension Division of the University of Minnesota in the Twin Cities area, and taught by regularly approved members of the graduate faculty (for this information, consult the chairman of the Students' Work Committee). Petition to transfer is limited to credits earned in Extension classes since September, 1943. Such transfer of credits will not give residence credit. (See box on page 53 for information on advanced engineering degree.)

For special adjustments which are possible regarding graduate credit in the School of Social Work, consult the School of Social Work.

Honor points—For Extension certificates honor points are used only to ascertain whether a student has the required C average; they are not used to reduce the number of credits required for a certificate. Students in Extension classes who are seeking degrees should consult an officer in the college in which the degree is sought regarding the status of honor points in that college.

Grades

The grades A, B, C, and D indicate work of varying degree of merit, D being the lowest passing grade. The grade F, failure, indicates a deficiency so serious that the student must repeat the class to earn credit in it; a student who receives a failure in a continuation class may not register for another part of such a class until the failure is made up.

Incomplete work which is of at least D grade, but for acceptable reasons not complete, may be marked I, Incomplete, provided the student has completed approximately three fourths of the work of the class. Incomplete work may be completed in any way the instructor directs and should have the student's earliest attention. If this is not done within a year, the incomplete becomes a cancellation. In such a case, a student may ask that the cancellation be set aside and that he be permitted to make up the incomplete. If his request is approved, the special examination fee, \$5, is charged.

Reports of students' grades are sent them by the Extension clerk in the University Office of Admissions and Records and cannot be furnished by the Extension offices. The assistant dean's office, however, will check reports if necessary and will obtain transcripts of students' records upon request.

Athletic Facilities and Season Tickets

Recreational activities for men and women are listed in this bulletin. In addition, men may use the gymnasium and swimming pool on terms available on request.

Any student enrolled for at least five credits of Extension classes (but not correspondence study courses) with a minimum fee of \$25 may purchase one season ticket book at \$10. Married students may purchase a second book, for use

by husband or wife only, at \$14, including additional federal admission tax equal to amount paid by general public. Books may be bought at the special student athletic ticket sale headquarters on the campus the week before classes begin. Regulations governing purchase, transfer, and cancellation of these books are available on request.

The University Library

Extension students attending classes in Minneapolis or St. Paul are entitled to draw books from the University Library to be used in connection with their classes but are subject to all library regulations including those in regard to return upon demand and to fines on overdue books. These regulations are set forth in the *Library Handbook*, copies of which may be had at the loan desk.

Minneapolis Symphony Orchestra Tickets

Special rates for season tickets to the regular concert season are available to students registered for at least five credits in Extension classes.

ADVICE AND COUNSELING

Members of the Extension Division staff are available at all offices by appointment throughout the year for general advisory services on the selection of classes, programs of study, certificate and degree requirements, etc. The Students' Work Committee in the Campus office assists students in arranging programs of study leading to university degrees, and handles evaluations of transcripts for advanced standing, satisfaction of prerequisites, special examinations, and other academic matters. Appointments for the testing and counseling services of the University Student Counseling Bureau may also be arranged through the Students' Work Committee.

Every effort will be made to have an adviser on duty at the Campus office at all times during special office hours before each semester (see inside cover). If special advice is required, however, an appointment is recommended. Advisers will be on duty at downtown offices during registration periods at convenient hours; consult offices for schedule or make special appointments.

UNIVERSITY DEGREES

It is possible through Extension classes alone to meet all the requirements for several of the regular university degrees such as: in the College of Science, Literature, and the Arts, the 4-year bachelor of arts with an interdepartmental major and the 2-year associate in liberal arts; in the School of Business Administration, the bachelor of business administration and the bachelor of science in economics. In some other degree programs an Extension student can complete all but a few credits in the most advanced subjects, while in still others such as Engineering, Education, Prelegal, Nursing, Pharmacy, Dentistry, etc., the Extension Division can furnish the equivalent of from one to two years of the total degree program. The major portion of the requirements for the master of science in engineering degree (Plan A) may be earned through Extension classes. For further information concerning this program, consult the Office of the Assistant Dean. (See box on page 53.)

A student who wishes to become a candidate for a university degree must eventually meet the admission requirements of the University and the entrance and degree requirements of the college in which the degree is sought. The Extension Students' Work Committee will assist the student to determine his status with regard to these requirements. In all cases an Extension student who has reached the point of qualifying for Senior College (the equivalent of junior or third year) standing should apply for admission to the college or school of his choice and, upon acceptance for admission, should select an adviser in such college or school and continue a program of study under the adviser's supervision. **All students who expect to complete the requirements for a university degree during a coming semester should make formal application at the beginning of the semester for the award by the college or school concerned.**

EXTENSION CERTIFICATES

The General Extension Division awards certificates for the satisfactory completion of approved programs of study. The work may be done in evening classes, correspondence study courses (see page 11), or both. Most day school or Summer Session credits from the University of Minnesota may be approved. Students may also transfer credits from other accredited institutions provided a minimum of 25 per cent of the credits required for the certificate is earned at the University of Minnesota. For advice or information on programs of study leading to certificates, including **permission for substitution and transfer of credits**, consult the Students' Work Committee. Certificates are awarded to students who complete with a C average any of the following programs of study:

LIBERAL EDUCATION CERTIFICATE

English requirement: Freshman Composition 4-5-6, or exemption.

Spread requirement: at least 6 credits in each of the following fields:

Humanities: English composition (beyond 4-5-6) or literature, fine arts, foreign languages, humanities, philosophy, speech

Sciences: astronomy, botany, chemistry, geology, mathematics, physics, psychology, zoology

Social Sciences: anthropology, economics, geography, history, political science, sociology

Concentration requirement: at least 12 credits in one subject, or in approved related subjects in addition to the 6 or 9 credits earned in that subject under the spread and English requirements above.

Electives: additional courses approved by the Students' Work Committee to make a total of **45 credits** for the certificate.

BUSINESS ADMINISTRATION CERTIFICATES

Junior Certificate

Core requirement:

Business English or Composition 4, or exemption

B.A. 51 Business Law

Econ. 5 Elements of Statistics

Econ. 6-7 Principles of Economics

Econ. 24-25-26 Principles of Accounting

Spread requirement: at least one three-credit course in any three of the following fields:

Business Administration: B.A. 89 Production Management

Distribution: Advertising, Marketing and Merchandising, Traffic and Transportation

Economics and Finance

Industrial Relations

Business Law: B.A. 52, 53, or 56

Concentration requirement: at least 9 additional credits in one of the following fields, or approved combination thereof:

Accounting

Advertising

Economics and Finance

Industrial Management

Industrial Relations

Insurance

Marketing and Merchandising

Real Estate

Traffic and Transportation

Electives: additional courses approved by the Students' Work Committee to make a total of **45 credits** for the certificate.

Senior Certificate

Core requirement:

Business English and Business Correspondence or Composition 4-5-6, or exemption

B.A. 51 and either 52 or 53 Business Law

B.A. 89 Production Management

Econ. 3 Elements of Money and Banking

Econ. 5 Elements of Statistics

Econ. 6-7 Principles of Economics

Econ. 24-25-26 Principles of Accounting

Econ. 73 Manpower Economics and Labor Problems

Concentration requirement: at least 18 additional credits in one of the following fields, or approved combination thereof:

Accounting	Insurance
Advertising	Marketing and Merchandising
Economics and Finance	Real Estate
Industrial Management	Traffic and Transportation
Industrial Relations	

Electives: additional courses approved by the Students' Work Committee to make a total of **90 credits** for the certificate.

INDUSTRIAL RELATIONS CERTIFICATE

Core requirement:

Econ. 6-7 Principles of Economics
 Econ. 73 Manpower Economics and Labor Problems
 Econ. 162 Labor Movements
 Econ. 164 Labor Legislation: Collective Bargaining
 B.A. 167 Introduction to Industrial Relations
 Survey of Current Problems in Industrial Relations
 Psy. 1-2 General Psychology
 Psy. 4-5 Introductory Laboratory Psychology
 Psy. 122-123 Vocational and Personnel Psychology

Electives: additional courses selected from the following or other approved courses to make a total of **45 credits**.

*B.A. 86 Office Management
 B.A. 89 Production Management
 Psy. 119 Psychology of Personality
 Psy. 125-126 Psychology of Individual Differences
 Psy. 144-145 Abnormal Psychology
 *Soc. 100 Social Psychology
 Wage and Salary Administration
 Elements of Supervision
 Advanced Supervision
 Work Simplification
 Work Measurement and Production Standards
 Industrial Plant Layout
 Elements of Union Administration
 Personnel Methods
 Wage and Salary Stabilization Programs
 Econ. 169 Labor Legislation: Economic Security

Special requirement: to qualify for the certificate award upon completion of the core and elective requirements, a student must pass an Industrial Relations Classification and Placement Test administered by the Industrial Relations Center.

GENERAL ENGINEERING CERTIFICATES

Junior Certificate

Core requirement:

M.&M. 11 College Algebra
 M.&M. 12 Trigonometry
 M.&M. 13 Analytic Geometry
 M.&M. 24 Differential Calculus
 M.&M. 25 Integral Calculus
 M.&M. 26 Technical Mechanics: Statics
 D.&D.G. 1-2 Engineering Drawing

Electives: additional courses approved by the Students' Work Committee to make a total of **45 credits** for the certificate.

Senior Certificate

Core requirement:

M.&M. 11 College Algebra
 M.&M. 12 Trigonometry
 M.&M. 13 Analytic Geometry
 M.&M. 24 Differential Calculus
 M.&M. 25 Integral Calculus
 M.&M. 26 Technical Mechanics: Statics
 M.&M. 127 Technical Mechanics: Dynamics
 M.&M. 128a-128b Strength of Materials
 D.&D.G. 1-2 Engineering Drawing

* Offered by correspondence study.

Concentration requirement: at least 30 additional credits in one of the following fields, or approved combination thereof:

Aeronautical Engineering	Electrical Engineering
Civil Engineering	Mechanical Engineering

Electives: additional courses approved by the Students' Work Committee to make a total of **90 credits** for the certificate.

INDUSTRIAL ENGINEERING CERTIFICATES

Junior Certificate

Core requirement:

- Comp. 4 or Business English
- M.&M. 11 College Algebra
- M.&M. 12 Trigonometry
- D.&D.G. 1-2 Engineering Drawing
- Machine Tool Operation I
- Econ. 6-7 Principles of Economics
- B.A. 89 Production Management
- Work Simplification
- Work Measurement and Production Standards

Electives: additional courses may be selected from the list of requirements or recommended electives listed under senior certificate provided that sufficient courses are taken to make a total of **45 credits** for the certificate.

Senior Certificate

Core requirement:

- Business English and Correspondence, or
- Comp. 4-5-6 or exemption
- M.&M. 11 College Algebra
- M.&M. 12 Trigonometry
- M.&M. 13 Analytic Geometry
- D.&D.G. 1-2 Engineering Drawing
- D.&D.G. 3 Descriptive Geometry
- Machine Tool Operation I-II
- Econ. 6-7 Principles of Economics
- Econ. 73 Manpower Economics and Labor Problems
- B.A. 167 Introduction to Industrial Relations
- Econ. 5 Elements of Statistics, or
- Basic Industrial Statistics I
- B.A. 89 Production Management
- Production Planning and Control
- Work Simplification
- Work Measurement and Production Standards
- Industrial Plant Layout
- Elements of Quality Control
- Manufacturing Cost Analysis

Electives: additional courses may be selected in other fields approved by the Students' Work Committee to make a total of **90 credits** for the certificate. The following courses are recommended:

- Psy. 1-2 General Psychology
- B.A. 133 Standard Cost Accounting
- Elements of Supervision
- Wage and Salary Administration
- D.&D.G. 52 Alignment Charts
- Industrial Safety and Hygiene
- Beginning Practical Speech Making
- Basic Salesmanship
- Motion Picture Photography

CORRESPONDENCE STUDY COURSES

A large selection of correspondence study courses is available to students who prefer this form of study; ask for a bulletin.

GENERAL CLASSES

AGRICULTURE

Note—Students who travel by street car or bus can reach the Agriculture Buildings on the St. Paul Campus by taking the intercampus street car that leaves the Minneapolis Campus at 5:50 p.m. and 6:10 p.m.

7 Principles of Livestock Production. 3 credits. \$15 plus \$2 laboratory fee.

An introduction to the livestock industry including a study of the basic principles involved in selection, feeding, breeding, and management of beef cattle, sheep, swine, horses, and poultry. Practice in judging the various kinds of farm animals. No prerequisite.

Fall Semester

T 7:00 Livestock Pavilion, St. Paul Campus,
Harvey

12 Dairy Stock Feeding and Management. 3 credits. \$15.

Emphasis on the practical side of dairy stock feeding and management of a modern dairy. Application of principles of nutrition to feeding. Feeding standards; characteristics of various feeding stuffs; formulation of rations. No prerequisite.

Spring Semester

Th 6:20 Haecker 9, St. Paul Campus,
Gullickson

Hort. 10 Home Floriculture and Gardening. 3 credits. \$15.

A practical course in the science of house plant growing, propagation and care of plants; and special emphasis on autumn gardening activities; growing bulbs in the garden and in pots for the home in winter. Student projects in growing plants from cuttings; and growing and forcing bulbs for winter house plants. A special course for the housewife, the school teacher, the tired businessman, the weary professional worker, and the plain-dirt gardener who wants to extend his knowledge of plant culture and enjoy some activity with plants throughout the year. No prerequisite.

Fall Semester

T 6:20 Horticulture 102, St. Paul Campus,
Phillips

Hort. 24 Home Landscape Planning. 3 credits. \$15.

An opportunity for the home owner to learn the principles of planning the home grounds and how to apply them to his own problem of landscaping his home grounds. This course is also designed to meet the needs of the nurseryman, the landscape gardener, and the student who expects to make his living by landscaping. Anyone planning a new home will find this course especially helpful in accomplishing his ideal, which is a well-planned house, and well-planned and planted grounds and gardens. No prerequisite.

Fall Semester

Th 6:20 Horticulture 102, St. Paul Campus,
Phillips

Hort. 25 Home Landscape Planting and Construction. 3 credits. \$15.

More or less a continuation of the course in Home Landscape Planning; however, a beginning student may take this course without being handicapped. Special emphasis is placed upon the recognition and use of plant materials in securing artistic landscape compositions and the planning and planting of ornamental gardens; also construction of lawns, gardens, walks, walls, fences, terraces, pools, etc. An art course in landscaping and gardening presented in a practical way for the home owner, the landscape gardener, the student of art and nature.

Spring Semester

Th 6:20 Horticulture 102, St. Paul Campus,
Phillips

Hort. 51 Garden Flowers and Home Gardening. 3 credits. \$15.

A complete, practical course in home gardening for the experienced gardener as well as the beginner. All the practical horticultural aspects of plant growing and garden and home grounds care are covered in lecture, demonstrations, and illustrations; student projects in propagating plants in greenhouses, hot beds, and home facilities. Special emphasis on pruning, fertilizing, weed, insect, disease control. Also a survey of all the plants recommended for Minnesota gardens and yards. No prerequisite.

Spring Semester

T 6:20 Horticulture 102, St. Paul Campus,
Phillips

Selection and Utilization of Meats I-II. 2 Extension credits. \$10 plus \$3 laboratory fee.

A course dealing with the major phases of meat and meat products which includes the sources, buying and selling, grading, and classification, the identification, nutritive value, cutting, and cooking of meats. This course also deals with the preservation and storage of meats including the aging, curing, smoking, and freezing of meats. Part I is prerequisite to Part II.

Fall Quarter
I T 7:20-9:00 Meat Shop, St. Paul
Campus, Aunan

Winter Quarter
II T 7:20-9:00 Meat Shop, St. Paul
Campus, Aunan

ANTHROPOLOGY**40 Introduction to Anthropology.** 3 credits. \$15.

The course serves as an introduction to the entire field of anthropology: physical anthropology, prehistory, cultural anthropology. Lectures and readings will cover man's relations to the primates, human evolution, the races of man, the development of culture, and a survey of the varieties of ways of life in primitive and modern societies. Introductory anthropology should be of special interest to students of related fields like history, sociology, and psychology.

Fall Semester
T 8:05 Ford 50, Endleman

113 The Character of Culture. 3 credits. \$15.

A more advanced course in cultural anthropology. Explores the relations between culture, social structure, and personality. Case-study analysis of a few specific societies, nonliterate and modern. The problem of cultural change. The special problems raised in anthropological approach to large-scale civilizations.

Spring Semester
T 8:05 Ford 50, Endleman

ART

* Note—All studio drawing and painting classes, designated by asterisks (*), will meet for a 2½-hour period. Those who wish to receive university credit in these courses will be expected to do some work outside of class—consult instructor. Students may register for any unit number of these sequences in any semester, provided units are satisfactorily completed in the order listed or instructor's consent is obtained for registration in an advanced unit on the basis of background and ability. Advanced standing credit will be granted in special cases for work done elsewhere—consult chairman of Art Department.

All registrations for St. Paul art classes will be taken only at the Extension Center, 500 Robert Street.

1 Introduction to Art. 3 credits. \$15.

An illustrated lecture course designed to give the student an understanding of art, including painting, sculpture, architecture, and the industrial arts. This understanding is based on the study of the principles involved in their creation, and recognition of the place of art in its social setting. Particular emphasis will be given to original works of art in the Walker Art Center and the Minneapolis Institute of Arts. No prerequisite. Repeated spring semester.

Fall Semester
T 7:30 Walker Art Center, Arnason

Spring Semester
T 7:30 Walker Art Center, Arnason

***20-21-22 First Year Drawing and Painting.** 2 credits each semester. \$15 plus \$2 laboratory fee. **First Year Drawing and Painting Laboratory** (St. Paul). 2 Extension credits. \$10.

Introduction to materials and techniques; still life, figures, and landscape. No prerequisite.

Fall Semester
T 7:00 Main Engineering 417, Doseff
Th 7:00 Main Engineering 417, Young
Th 7:00 St. P. Gallery
Lab. T 7:00 St. P. Gallery

Spring Semester
T 7:00 Main Engineering 417, Doseff
Th 7:00 Main Engineering 417, Young
Th 7:00 St. P. Gallery
Lab. T 7:00 St. P. Gallery

***30-31-32 Commercial Drawing.** 2 credits each semester. \$15 plus \$1 laboratory fee.

Elementary and advanced commercial art: design, lettering, layouts, posters in pen and ink, pencil, color, or other media. Solutions of practical problems stressed. Special attention to fashion drawing and design. No prerequisite.

Fall Semester
M 7:00 Main Engineering 417, Doseff

Spring Semester
M 7:00 Main Engineering 417, Doseff

***33 Textile Design: Weaving. 2 credits. \$15.**

Textile design and construction offering experience in all the processes involving the two-harness loom, including the designing and weaving of the finished fabric with explorations in texture, spacing, and color for specific uses such as clothing, rugs, drapery, and accessories. Prerequisite: consent of instructor.

Spring Semester

M 7:00 St. P. Gallery, Kolb

***34 Textile Design: Weaving. 2 credits. \$15.**

Extension of the beginning course in Textile Design: Weaving (formerly 87) into four-harness weaving with continuation of exploration in texture, spacing and color. Prerequisite: Textiles 87 or equivalent.

Fall Semester

T 7:00 St. P. Gallery, Kolb

***40-41-42 Sculpture I—Modeling. 2 credits each semester. \$15 plus \$2 laboratory fee.**

A basic course in sculpture introducing the student to the fundamental materials and problems of three-dimensional design necessary for further work in sculpture or ceramics. Modeling in clay and plaster. Ceramic sculpture. Portrait, figure, and volume design. No prerequisite.

Fall Semester

W 7:00 Main Engineering 405, Sabean

Spring Semester

W 7:00 Main Engineering 405, Sabean

***43-44-45 Design Workshop. 2 credits each semester. \$15 plus \$2 laboratory fee.**

Studies in the natures of materials, exercises in three-dimensional design. Work in metal, wood, clay, leather, plastics, etc. Class meets for 2½-hour period. No prerequisite.

Fall Semester

T 7:00 Jones 2, Sabean

Spring Semester

T 7:00 Jones 2, Sabean

***60-61-62 Second Year Drawing and Painting. 2 credits each semester. \$15 plus \$2 laboratory fee. Second Year Drawing and Painting Laboratory (St. Paul). 2 Extension credits. \$10.**

Still life and figure problems to be carried out in charcoal, chalk, water color, and oil. Study of problems related to drawing and painting through experiments designed to suit the needs and purposes of the individual student. Prerequisite: First Year Drawing and Painting or equivalent with instructor's consent.

Fall Semester

T 7:00 Jones 200B, Arnest

W 7:00 St. P. Gallery

Lab. T 7:00 St. P. Gallery

Spring Semester

T 7:00 Jones 200B, Arnest

W 7:00 St. P. Gallery

Lab. T 7:00 St. P. Gallery

67 Modern Art: Realism and Impressionism. 3 credits. \$15.

A study of painting, sculpture, and architecture during the second half of the nineteenth century with particular emphasis on the schools of Paris, their influence and parallels in England, Germany, and the United States. Prerequisite: Art 1 or consent of instructor.

Fall Semester

Th 7:00 Jones 207B, Eitner

68 Modern Art: Contemporary Art in Europe and America. 3 credits. \$15.

A study of the development of painting, sculpture, and architecture in Europe and the United States during the twentieth century. Prerequisite: Art 1 or consent of instructor.

Spring Semester

Th 7:00 Jones 207B, Eitner

83 Interior Design (Interior Decorating I). 3 credits. \$15 plus 50 cents laboratory fee.

A study of traditional and modern furniture used today and of how to combine various styles. Additional subjects include room composition, color, floor coverings, wall treatments, window treatments. Some general discussions of new ideas and materials in home building. Interesting optional field trips. Drawing not emphasized. Slides and practical demonstrations are used in the regular class procedure. Each section is limited to 65 students, accepted in order of registration. Repeated spring semester. No prerequisite.

Fall Semester

M 6:20 Nicholson 209, Lewis

T 6:20 Nicholson 209, Lewis

W 6:20 Nicholson 209, Lewis

Th 7:00 Nicholson 209, Lewis

Spring Semester

M 6:20 Nicholson 209, Lewis

Th 6:20 Nicholson 209, Lewis

84 Interior Design (Interior Decorating II). 3 credits. \$15 plus 50 cents laboratory fee.

A study of decorative fabrics is an important part of the course. Students plan color schemes for specific rooms and have available beautiful fabrics and other materials. Such accessories as china, glass, silver, and movable wall decorations are included. Several talks are given by buyers from loop stores. Students are required to do some drawing and experimenting with paints; therefore, auditing is not advised. Prerequisite: Art 83.

Spring Semester
T 6:20 Nicholson 209, Lewis
W 6:20 Nicholson 209, Lewis

***90-91-92 Print Processes.** 2 credits per semester. \$15 plus \$5 materials fee.

Engraving, etching, lithography, block prints. Prerequisite: consent of instructor.

Fall Semester
Th 6:20 Jones 203, Myers

Spring Semester
Th 6:20 Jones 203, Myers

***93-94-95 Ceramics.** 2 credits each semester. \$15 plus \$5 laboratory fee. **Ceramics Laboratory (St. Paul).** 2 Extension credits. \$10.

Introduction to materials, forming methods, and production processes. Model making by hand and machine methods. Problems in product design, such as dinnerware. Experience in industrial methods of forming, such as slip casting, jiggering, and pressing. Fundamentals of pottery including handbuilding and wheel throwing. No prerequisite.

Fall Semester
M 6:20 Jones 10, Frazier
W 7:00 St. P. Gallery, Kolb
Th 7:00 St. P. Gallery, Kolb
Lab. M 7:00 St. P. Gallery, Kolb

Spring Semester
M 6:20 Jones 10, Frazier
W 7:00 St. P. Gallery, Kolb
Th 7:00 St. P. Gallery, Kolb
Lab. M 7:00 St. P. Gallery, Kolb

103 Seminar in Interior Design. 3 credits. \$15 plus 50 cents laboratory fee.

An expansion of some of the fundamentals in Art 83-84. Students will work on individual projects under supervision. No auditors. Class limited to 20. Prerequisite: Art 84.

Fall Semester
W 8:05 Nicholson 209, Lewis

137 Art in the United States. 3 credits. \$15.

Painting, sculpture and architecture in the United States from the Colonial period to the mid-nineteenth century. Prerequisite: consult instructor.

Fall Semester
W 7:00 Jones 207B, Torbert

138 Art in the United States. 3 credits. \$15.

The later nineteenth century and the twentieth century movements in painting, sculpture, and architecture in the United States. Prerequisite: consult instructor.

Spring Semester
W 7:00 Jones 207B, Torbert

***140-141-142 Contemporary Jewelry Design.** 3 credits each semester. \$15 plus \$7.50 laboratory fee.

In the development of contemporary jewelry, the student learns the basic processes of soldering, forming, forging, engraving, chasing, and repoussé. Prerequisite: consent of instructor.

Fall Semester
Th 6:20 Jones 11, Morton

Spring Semester
Th 6:20 Jones 11, Morton

Art Ed. 17-18 Survey of Art. See page 19.

Architectural Drafting. See page 55.

Production Illustration. See page 55.

Industrial Design. See page 55.

Beginning and Advanced Cameracraft. See pages 31 and 32.

Applied Photography I-II. See page 32.

Motion Picture Photography. See page 32.

Gardening and Landscaping. See page 12.

Modern Home Planning and Drawing. See page 25.

EXTENSION CLASSES

The following courses will be given at the Minneapolis School of Art, 1951-52.

***15 Lettering. 2 credits. \$15.**

The study and practice of free and constructed lettering. A special emphasis is placed upon relationship of the lettering to all other visual elements which make up a total composition or layout. Essential to commercial artist and especially recommended for the fine artist. Repeated spring semester. No prerequisite.

Fall Semester

M 7:00 Mpls. School of Art, Mousseau

Spring Semester

M 7:00 Mpls. School of Art, Mousseau

***20 Basic Drawing. 3 credits. \$22.50.**

Drawing and composition from a wide range of subject shapes. Emphasis is placed upon the basic principles of drawing and composition. Total pictorial organization is the aim of the course. A wide variety of media is used. Repeated spring semester. No prerequisite.

Fall Semester

W 7:00 Mpls. School of Art, Mousseau

Th 7:00 Mpls. School of Art, Mousseau

Spring Semester

W 7:00 Mpls. School of Art, Mousseau

Th 7:00 Mpls. School of Art, Mousseau

***21 Life Drawing. 2 credits. \$15.**

Drawing and composition from the nude figure. Special emphasis on surface anatomy and shape characteristics of the individual model. Many figure compositions, and over-sized drawings of parts of the human figure are among the varied problems. All drawing media used. No prerequisite. Repeated spring semester.

Fall Semester

Th 7:00 Mpls. School of Art, Lamm

Spring Semester

Th 7:00 Mpls. School of Art, Lamm

***22 Basic Painting. 3 credits. \$22.50.**

Observed and experienced shapes are used in the construction of objective and non-objective painting. The media may be oil, casein, or watercolor. Special attention is focused upon the selective elements which are expressive of the particular subject consideration. Stress is placed upon the keying and limitation of the palette. Repeated spring semester. No prerequisite.

Fall Semester

M 7:00 Mpls. School of Art, Ryan

W 7:00 Mpls. School of Art, Ryan

Spring Semester

M 7:00 Mpls. School of Art, Ryan

W 7:00 Mpls. School of Art, Ryan

***60 Advanced Drawing. 3 credits. \$22.50.**

A broadly designed course of drawing from a wide range of subject material. Life and portrait drawing, still life and nonobjective compositions are made in a wide variety of media. The aim is to impress the student with the fact that visual organization is more important than the accident of subject matter. Repeated spring semester. Prerequisite: Drawing 20 or equivalent.

Fall Semester

M 7:00 Mpls. School of Art, Lamm

W 7:00 Mpls. School of Art, Lamm

Spring Semester

M 7:00 Mpls. School of Art, Lamm

W 7:00 Mpls. School of Art, Lamm

***61 Painting and Illustration. 3 credits. \$22.50.**

This course is a continuation of the basic painting class with additional problems in composition from a free choice and from assignment. The common elements of fine and commercial arts are pointed up. Prerequisite: Drawing 20 and Painting 22 or equivalent. Repeated spring semester.

Fall Semester

W 7:00 Mpls. School of Art, Quick

Th 7:00 Mpls. School of Art, Quick

Spring Semester

W 7:00 Mpls. School of Art, Quick

Th 7:00 Mpls. School of Art, Quick

***73 Layout. 2 credits. \$15.**

Instruction encompasses methods of procedure for up-to-the-minute commercial art assignments and studio practices. Repeated spring semester. Prerequisite: Lettering 15.

Fall Semester

Th 7:00 Mpls. School of Art, Jewett

Spring Semester

Th 7:00 Mpls. School of Art, Jewett

***74 Fashion Illustration. 2 credits. \$15.**

Specialized fashion illustration in black and white from the costume model. The course is designed for artists wishing to enter the newspaper and magazine fashion illustration field. Reproduction techniques are studied. Prerequisite: Life Drawing 21. Repeated spring semester.

Fall Semester

Th 7:00 Mpls. School of Art, Peterson

Spring Semester

Th 7:00 Mpls. School of Art, Peterson

***75 Commercial Art. 2 credits. \$15.**

The organization and composition of visual elements as used in newspaper, magazine, poster, and booklet design. The class includes lettering, type study, and color work in relation to the design and the designated processes of reproduction. Prerequisite: Drawing 20 or equivalent. Repeated spring semester.

Fall Semester

M 7:00 Mpls. School of Art, Whelam

W 7:00 Mpls. School of Art, Whelam

Spring Semester

M 7:00 Mpls. School of Art, Whelam

W 7:00 Mpls. School of Art, Whelam

ASTRONOMY

Note—Students who wish to use astronomy to meet the natural science requirement for either the A.L.A. or B.A. degrees in the College of Science, Literature, and the Arts may do so by completing Astronomy 11 and 13 and another related course approved by the Students' Work Committee.

11 Descriptive Astronomy. 3 credits. \$15.

The general principles and fundamental facts of astronomy; illustrated by lantern slides, simple problems, and naked-eye and telescopic observation. The new Spitz Projection Planetarium will be used extensively to provide superior demonstration opportunities regardless of weather conditions. Higher mathematics not necessary.

Fall Semester

W 6:20 Physics 133, Luyten

13 Practical and Stellar Astronomy. 3 credits. \$15.

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

Spring Semester

W 6:20 Physics 133, Luyten

BACTERIOLOGY

Note: Students who cannot furnish their own microscopes for bacteriology classes will be required to pay \$3 for a microscope rental card which may be obtained at the first laboratory session.

53 General Bacteriology. 5 credits. \$25 plus \$3 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 and to disease; bacteriology as a science; morphology and physiology. Class meets 6 hours per week for 11 weeks. Prerequisite: 10 credits in chemistry and 4 credits in biological sciences, or permission of instructor.

Fall Quarter

MW 7:00 Millard 214, Werder

114 Medical Mycology. 3 credits. \$15 plus \$3 laboratory fee.

A study of the pathogenic fungi and of the mycotic infections in man and animals; special emphasis is placed on diagnostic procedures. Class meets 6 hours per week for 11 weeks. Prerequisite: Medical Bacteriology 102.

February 11-April 23

MW 7:00 Millard 214, Roth

CHEMISTRY

A \$10 chemistry deposit card is required for each of the courses in chemistry. Information concerning the procurement of this card will be given at the first meeting of each class. A course fee of \$3 and charges for laboratory material and breakage will be punched out of the deposit card. The balance will be returned to the student at the end of the semester.

6-7† General Inorganic Chemistry. 5 credits per semester. \$25.

Study of the general laws of chemistry and of the nonmetals, metals and their compounds. No prerequisite.

Fall Semester

6 Lab. T	7:00-10:00	Chemistry 325, Herr	7 Lab. T	7:00-10:00	Chemistry 325, Herr
Lect. Th	7:00-9:00	Chemistry 325, Herr	Lect. Th	7:00-9:00	Chemistry 325, Herr

Spring Semester**12 Semimicro Qualitative Analysis.** 5 credits. \$25.

Laboratory work in systematic qualitative analysis of cations with lectures on solutions, ionization, chemical and physical equilibria, oxidation and reduction, etc. Prerequisite: Inorganic Chemistry 2, 5, 7 or 10.

Fall Semester

Lect. T	8:00-10:00	Chemistry 325, Herr
Lab. Th	7:00-10:00	Chemistry 325, Herr

1 Quantitative Analysis—Gravimetric. 5 credits. \$25.

Principles and methods of gravimetric analysis; typical problems and proper laboratory practice. Prerequisite: Inorganic Chemistry 11 or 12.

Spring Semester

Lect. T	6:00-8:00	Chemistry 315, Herr
Lab. Th	7:00-10:30	Chemistry 310, Herr

† See Information, page 6.

2 Quantitative Analysis—Volumetric. 5 credits. \$25.

General principles, methods and calculations of volumetric analysis. Prerequisite: Inorganic Chemistry 11 or 12.

Fall Semester

Lect. T 6:00-8:00 Chemistry 315, Herr
Lab. Th 7:00-10:30 Chemistry 310, Herr

7 Quantitative Analysis—Premedical. 4 credits. \$20.

Introductory, covering principles and methods of gravimetric and volumetric quantitative analysis; typical problems and proper laboratory practice. Prerequisite: Qualitative Analysis 11 or 12.

Spring Semester

Lect. T 8:00-10:00 Chemistry 315, Herr
Lab. Th 7:00-10:30 Chemistry 310, Herr

123 Advanced Quantitative Analysis. 3 credits. \$15.

Prerequisite: Analytical Chemistry 1-2 or equivalent. Repeated spring semester.

Fall Semester

TTh 7:00-10:00 Chemistry 310, Herr

Spring Semester

TTh 7:00-10:00 Chemistry 310, Herr

Practical Laboratory Instrumentation. 4½ Extension credits. \$22.50 plus \$2.50 laboratory fee.

An elementary course designed to cover the principles of operation and maintenance of colorimeters, spectrophotometers, nephelometers, fluorometers, pH meters, and other electronic and optical instruments used in analytical and research laboratories. Simplified theory and the practical aspects of maintenance and repair are stressed. Typical circuits are analyzed and explained. The course is divided between lecture and laboratory. Seventeen 3-hour meetings. No prerequisite.

Fall Semester

T 6:20 Physics 133, Edmondson

CHILD WELFARE

40 Child Training. 3 credits. \$15.

Physical and mental development of the child; training of young children; behavior problems; techniques of good and bad management. Repeated spring semester. Prerequisite: Psychology 1-2.

Fall Semester

M 8:05 Folwell 101, Cummings

Spring Semester

M 8:05 Folwell 101, Cummings

80 Child Psychology. 3 credits. \$15.

A survey of the psychology of the young child from the standpoint of development and learning. Repeated spring semester. Prerequisite: Psychology 1-2.

Fall Semester

T 6:20 Folwell 101, Deno

Spring Semester

T 6:20 Folwell 101, Deno

132 Later Childhood and Adolescence. 3 credits. \$15.

The meaning of adolescence; growth and personality development; vocational guidance; sex education, social adjustment, and emancipation from the family. Prerequisite: Child Welfare 80 or equivalent.

Spring Semester

M 6:20 Folwell 101, Brieland

140 Behavior Problems in Younger Children (Same as S.W. 173A). 3 credits. \$15.

Nature and origin of behavior difficulties in younger children; relation of earlier to later maladjustment; assessment, treatment and training. Prerequisite: 12 credits in psychology, educational psychology or sociology.

Fall Semester

M 8:05 Folwell 105, Deno

Spring Semester

M 8:05 Folwell 105, Deno

141 Behavior Problems in Older Children (Same as S.W. 173B). 3 credits. \$15.

Origin and underlying factors in behavior difficulties in older children; adjustment at adolescence; treatment and training. Prerequisite: 12 credits in psychology, educational psychology or sociology.

Spring Semester

M 8:05 Folwell 105, Deno

170 Parent Education. 3 credits. \$15.

Programs, materials, methods, organization and administration. Stresses methods of working with adult or parent groups rather than content. Demonstrations of group procedures. Prerequisite: 15 credits in psychology, education, sociology, public health or home economics.

Fall Semester

M 6:20 Folwell 101, Brieland

EDUCATION

Art Education

17-18 Survey of Art in Life and Education. 3 credits each semester. \$15.

An introductory survey for the education majors, especially elementary teachers, to develop appreciation and understanding through illustrated lectures, laboratory demonstrations and experiments of the content and importance of art in modern education. 17: The artist's contribution to our lives, his materials, techniques, and basic modes of expression. 18: The importance of design in historic and modern art; influential ideas, individuals and movements; significant relationships between art and nature. The number listed is the emphasis which prevails for the semester. A complete course is offered each semester; open to all. No prerequisite.

Fall Semester
17 W 6:20 Jones 109, Gayne

Spring Semester
18 W 6:20 Jones 109, Gayne

81 Puppetry in Art Education Programs. 3 credits. \$15 plus \$1.50 materials fee.

The use of various forms of simple puppetry as a teaching technique with emphasis on problems of motivation and correlation with school subjects. Construction, manipulation, and stage techniques approached as they relate to typical school situations. Repeated spring semester.

Fall Semester
Th 6:20 Jones 108, Farnam

Spring Semester
Th 6:20 Jones 108, Farnam

Curriculum and Instruction

Ed.C.I. 152 Supervision: The Adjustment of Schools to Individual Differences. 3 credits. \$15.

The adaptation of the school, the curriculum, and classroom procedures to the abilities and interests of the pupils.

Spring Semester
Th 6:20 St. P. Ext. Center 217, Van Wagenen

Educational Psychology

60 Introduction to Measurements and Statistics. 3 credits. \$15.

This course includes a study of measures of central tendency, variability and correlation. Prerequisite: 6 credits in psychology.

Fall Semester
M 6:20 N.W. Bank 690, Van Wagenen

Spring Semester
M 6:20 N.W. Bank 690, Van Wagenen

120 Basic Principles of Measurement. 3 credits. \$15.

Principles of measurement applied to the construction and evaluation of tests and to the interpretation of scores. Illustrations from achievement, intelligence, interest, attitude, and personality tests. Prerequisite: Educational Psychology 60 or equivalent.

183 Education of Gifted Children. 3 credits. \$15.

A study of the abilities, potentialities and characteristics of intellectually gifted children. Prerequisite: Education 55B or 71C or equivalent.

Fall Semester
Th 6:20 St. P. Ext. Center 217, Van Wagenen

History of Education

90-91 Problems and Techniques of Intergroup Education. 3 credits each unit. \$15.

These courses have two main objectives: (1) to inquire into the kinds of information and attitudes of mind a student, whether as teacher or as citizen, should possess in order to live happily and usefully in a democratic society; (2) to provide an opportunity for students to familiarize themselves with the techniques of intergroup education adapted to classroom use. Panels, films, exhibits, recordings, etc., are employed for concrete illustration. **Not offered in Twin Cities 1951-52.**

Nursing Education

58 Introduction to Ward Administration. 3 credits. \$15.

The place of the head nurse in the hospital organization, basic principles of maintaining a good nursing service, analyzing patients' needs and directing the activities of the ward personnel. Open to graduate nurses. Repeated spring semester.

Fall Semester
M 5:00 Owre 111, Grainger

Spring Semester
M 5:00 Owre 111

62 Introduction to Personnel Work in Nursing. 3 credits. \$15.

An introduction to the principles, techniques, and application of the personnel point of view to nursing through consideration of such topics as psychological principles; the nature, measurement, evaluation, and recording of individual differences in intelligence, special abilities, motivation, and personality; and study of counseling techniques appropriate for the nursing staff and faculty to use. Open to graduate nurses.

Fall Semester

T 6:20 Owre 113, Johnston

72 Application of Principles of Learning to Clinical Teaching. 3 credits. \$15.

Study of learning situations in the basic professional program in nursing. Sources, selections, and organization of instructional materials; evaluation of nursing care; content and methods of clinical teaching; measurement of outcomes. Open to graduate nurses.

Spring Semester

T 6:20 Owre 113, Boyle

79 The Nurse's Role in Maintaining Emotional Health. 3 credits. \$15.

Study of the mental health principles and techniques involved in carrying out complete nursing care for patients. Special needs of the chronically ill and aged will be studied. Open to graduate nurses.

Fall Semester

W 6:20 Owre 113, Ledger

Nurs. 101 Nursing in Atomic Warfare. 3 credits. \$15.

Nursing responsibilities in preparing community for atomic warfare and caring for patients in areas involved in atomic bombing. Registration restricted to graduate professional nurses.

Fall Semester

Th 6:20 Owre 113, Hanson and others

ENGLISH

A Special Lecture and Discussion Course: Literature and Society in America.

Thursday evenings at 8:00. No credit. No examinations. \$5.

A series of six sessions focusing upon the relation of literature to democratic society in America since the Civil War. Each session will center upon a single novelist or poet and upon a single novel, poem, or group of poems. (These texts, available in inexpensive reprints, will be announced at the time of registration; the audience is urged to read the texts in advance.) A discussion period, led by the chairman of the course, will follow each lecture; and the chairman will provide connections between lectures.

October 11: "Walt Whitman," by Leo Marx, Assistant Professor of English, chairman of the course.

October 25: "Mark Twain," by Henry Nash Smith, Professor of English, author of the recent prize-winning book *Virgin Land*.

November 8: "Edwin Arlington Robinson," by Louis Coxé, Assistant Professor of English, co-author of the recent Broadway play *Billy Budd*.

November 15: "Hart Crane," by Allen Tate, Professor of English, noted poet and critic.

November 29: "John Steinbeck," by Bernard Bowron, Associate Professor of English.

December 13: "T. S. Eliot," by Ralph G. Ross, Professor of General Studies, Chairman of the Humanities Program.

English Placement Tests.

Admission to composition classes beyond Preparatory Composition is based on satisfactory score in English Placement Test, or satisfactory completion of Preparatory Composition. Please note the following: (1) If you took the Placement Test in a Minnesota high school within the last three 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 giving in addition to your name, the name of your high school and the date of graduation. (2) If you have not taken the test, or if you took the test more than three years ago, report for it at one of the following times and places.

Fall Semester

7:00	Tuesday, September 25	Room 211, Nicholson Hall
7:00	Tuesday, September 25	Room 206, St. P. Ext. Center
7:00	Wednesday, October 3	Room 211, Nicholson Hall

Spring Semester

7:00	Tuesday, February 5	Room 211, Nicholson Hall
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Preparatory Composition. No credit. \$15.

Intensive drill on grammatical forms, structure, and theme writing. No prerequisite. Repeated during spring semester. Note Composition 4-5-6 below.

Fall Semester		Spring Semester	
Th 6:20	Folwell 209, Gudas	Th 6:20	Folwell 209, Gudas

Grammar Review. 3 Extension credits. \$15.

A "refresher" course for those who need a quick and thorough review of grammar, mechanics, and usage. More intensive than Preparatory Composition. Includes theme writing. No prerequisite.

Fall Semester		Spring Semester	
T 6:20	Folwell 105, Miller	Th 6:20	St. P. Ext. Center 214, Miller

A-B-C Freshman English. 7½ credits each semester. \$37.50.

This sequence consists of 3 credits of literature (tuition fee, \$15) and 4½ credits of composition (\$22.50) each semester. The composition is identical with that in Freshman Composition 4-5-6, and satisfies the English requirement for graduation. The literature read consists of novels, short stories, plays, and poetry—both English and American, and mostly modern—and is intended to interest the student who would enjoy, and profit from, the study of literature but who wants to major in some other subject. Students who have satisfactorily completed 4-5-6 may register for 3 credits of literature only each semester. Prerequisite: see note on English Placement Tests, above.

Fall Semester		Spring Semester	
A-B Literature:		B-C Literature:	
Th 6:20	Folwell 205, del Plaine	Th 6:20	Folwell 205, del Plaine
Composition sections:			
4-5 M 6:20	Folwell 205, del Plaine	4-5 W 6:20	Folwell 105, Nurmi
T 6:20	St. P. Ext. Center 219, Gudas	5-6 M 6:20	Folwell 205, del Plaine
W 6:20	Folwell 205, Rice	T 6:20	St. P. Ext. Center 219, Gudas
5-6 W 6:20	Folwell 105, Nurmi	W 6:20	Folwell 205, Rice

4-5-6 Freshman Composition. 4½ credits each semester. \$22.50.

This sequence satisfies the English requirement for graduation and is prerequisite to other English classes. Class meets for a period of 2½ hours each week. Prerequisite: Preparatory Composition or satisfactory score on English Placement Test, explained above.

Fall Semester		Spring Semester	
4-5 M 6:20	Folwell 205, del Plaine	4-5 W 6:20	Folwell 105, Nurmi
T 6:20	St. P. Ext. Center 219, Gudas	5-6 M 6:20	Folwell 205, del Plaine
W 6:20	Folwell 205, Rice	T 6:20	St. P. Ext. Center 219, Gudas
5-6 W 6:20	Folwell 105, Nurmi	W 6:20	Folwell 205, Rice

27-28-29 Advanced Writing. 3 credits each quarter. \$15.

Offers training in the fundamentals of creative writing, through lectures and the criticism of manuscripts. Advanced Writing 27 deals with expository writing; articles, essays, criticism, etc. Advanced Writing 28 deals with description and narration. Advanced Writing 29 is a continuation of 27 and 28 for students who wish further opportunity to write, and includes readings from current writers with special attention to technique. Students may begin with either 28 or 27. Prerequisite: Composition 4-5-6, or consent of instructor.

Fall Quarter		Winter Quarter		Spring Quarter	
27 T 6:20	Folwell 213, Smith	28	(same schedule as fall)	29	(same schedule as fall)

37 Twentieth-Century Short Story. 3 credits. \$15.

An introductory sampling of the modern short story, covering such authors as Jack London, Ring Lardner, Somerset Maugham, Dorothy Parker, Thomas Wolfe, and John Steinbeck. Prerequisite: Freshman English A-B-C, 4-5-6, Communication 1-2-3, or exemption from requirement.

Fall Semester	
W 6:20	Folwell 213, Rathburn

55-56 Shakespeare. 3 credits each semester. \$15.

55: The reading of selected comedies—*A Midsummer Night's Dream*, *The Merchant of Venice*, *Much Ado about Nothing*, *Twelfth Night*, *Measure for Measure*, *The Tempest*, and others. 56: The reading of selected histories and tragedies—*Richard II*, *Henry IV*, 1 and 2, *Henry V*, *Julius Caesar*, *Hamlet*, *Macbeth*. Prerequisite: Composition 4-5-6 (or exemption) and 6 additional credits.

Fall Semester		Spring Semester	
56 T 6:20	Folwell 110, Christie	55 T 6:20	Folwell 110, Christie

101-102 Seminar in Writing (Advanced Short Story). 3 credits each semester. \$15.

For advanced and professional students who write with facility and desire personal direction. Criticism of manuscripts submitted. Prerequisite: consult instructor.

Fall Semester		Spring Semester	
101 Th 6:20	Folwell 203, Macdonald	102 Th 6:20	Folwell 203, Macdonald

129 Modern Drama, 1880 to the Present. 3 credits. \$15.

A survey of the chief dramatists, English, American, and Continental, from the time of Ibsen. Prerequisite: Senior College standing and 6 credits in literature, exclusive of Classics and A-B-C, or consent of instructor.

Spring Semester

W 6:20 Folwell 113, Feder

Business English. See page 45.

Humanities. See page 25.

FAMILY LIFE

1 Preparation for Marriage. See Personal Orientation, page 30.

Modern Marriage Adjustments. See page 30.

Child Welfare courses. See page 18.

FRENCH**1-2 Beginning French.** 3 credits each semester. \$15.

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

Fall Semester

1 W 6:20 Folwell 201, Sullivan

Spring Semester

2 W 6:20 Folwell 201, Sullivan

3-4 Intermediate French. 3 credits each semester. \$15.

Readings from modern authors, review of essential grammar, emphasis on spoken French. Prerequisite: French 1-2 or 2 years of preparatory French.

Fall Semester

3 M 6:20 Folwell 213, Butler

Spring Semester

4 M 6:20 Folwell 213, Butler

17a-b French for Graduate Students. No credit. \$15.

Fundamentals of grammar; reading of appropriate prose. Prepares for examinations in French. No prerequisite for 17a; for 17b: 17a, or two years of French in high school or equivalent.

Fall Semester

17a M 6:20 Folwell 102, Brackney

Spring Semester

17a M 6:20 Folwell 124, Pulleyn

17b M 6:20 Folwell 124, Pulleyn

17b M 6:20 Folwell 102, Brackney

54-55 Elementary French Conversation. 3 credits each semester. \$15.

Informal discussion of current affairs and everyday topics. Prerequisite: consent of instructor.

Fall Semester

54 W 6:20 Folwell 203, Nahas

Spring Semester

55 W 6:20 Folwell 203, Nahas

GARDENING

For all classes in Gardening and Landscaping, see Agriculture, page 12.

GENERAL STUDIES

F.L. 1 Preparation for Marriage. See page 30.

Modern Marriage. See page 30.

Hum. 1, 2, 3, 4 Humanities in the Modern World I, II, III, IV. See page 25.

Hum. 12 The Roman and Medieval Heritage. See page 26.

Hum. 13 The Renaissance Heritage. See page 26.

Art 1 Introduction to Art (Understanding the Arts). See page 13.

Pers.Or. 1 How to Study. See page 29.

Phil. 71 Design for America. See page 31.

GEOGRAPHY**41 Geography of Commercial Production.** 5 credits. \$25.

An introductory course in economic geography with special emphasis on commodities of commercial significance. Particular attention is given to the world patterns of raw material occurrence and production, as well as to the associated centers of industrial fabrication. No prerequisite.

Fall Semester

M 6:20 Ford 285, Weaver

107 Geography of the Soviet Union. 3 credits. \$15.

The character of and bases for the regional diversity of physical resources, population, agriculture, manufacturing, and transportation in the U.S.S.R. Prerequisite: 5 credits in geography or consent of instructor.

Spring Semester

M 6:20 Ford 285, Borchert

GEOLOGY**1 General Geology (Dynamic). 3 credits. \$15.****A Dynamic Geology Laboratory. 2 credits. \$10.**

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, and other economic mineral resources. No prerequisite.

Fall Semester

1 T 6:20 Pillsbury 210, Wright

A T 8:05 Pillsbury 22, Weiss

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

2 General Geology (Historical). 3 credits. \$15.

A résumé of the theories as to the origin of the earth, its geologic history, and the changes in its plant and animal life throughout the ages. Prerequisite: Geology 1.

Spring Semester

T 6:20 Pillsbury 210, Weiss

23 Mineralogy. 3 credits. \$15.

A study of the physical and chemical characteristics of minerals; occurrence, genesis, and uses. Determinative work and identification of minerals by physical tests. No prerequisite.

Fall Semester

Th 6:20 Pillsbury 110, Gardiner

24 Mineralogy. 3 credits. \$15.

A continuation of the study of physical and chemical characteristics of minerals; their occurrence, genesis and uses. Prerequisite: Geology 23 if possible but the student may register without it.

Spring Semester

Th 6:20 Pillsbury 110, Gardiner

GERMAN**1-2 Beginning German. 3 credits each semester. \$15.**

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

Fall Semester

1 T 6:20 Folwell 207, Ramras

Spring Semester

2 T 6:20 Folwell 207, Ramras

3 Beginning German. 3 credits. \$15.

Readings from modern authors, review of essential grammar, emphasis on spoken German. Prerequisite: German 1-2 or 2 years of high school German.

Fall Semester

T 6:20 Folwell 206, Menze

4 Intermediate German. 3 credits. \$15.

Modern narrative prose. Prerequisite: German 3.

Spring Semester

T 6:20 Folwell 206, Menze

17a-b German for Graduate Students. No credit. \$15.

Designed to help graduate students acquire a reading knowledge of German as required of candidates for higher degrees. Grammar is reduced to a minimum, with stress on recognition of forms encountered in reading. Rapid reading of simple, graded material. Intensive reading of more difficult material selected from the various fields of specialization. Detailed study of several sets of examinations in each of the fields. No prerequisite for 17a; for 17b: two years of German in high school, or equivalent.

Fall Semester

17a M 6:20 Folwell 206, Downs

17b M 6:20 Folwell 209, Wangsness

Spring Semester

17a M 6:20 Folwell 209, Downs

17b M 6:20 Folwell 206, Wangsness

17b M 6:20 Agronomy 408, St. P. Campus, Pröttengeier

HEALTH

50 Personal and Community Health. 3 credits. \$15.

Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings. Open to students who have not taken 3, 4, 51, 52, 100 or General College 10C. No prerequisite.

Fall Semester

Th 6:20 Owre 111, Thomson

75 Introduction to Environmental Sanitation. 3 credits. \$15.

Principles of urban and rural sanitation relating to water, food, wastes, housing, air, insects, rodents. Prerequisite: 3 credits in public health.

Spring Semester

T 6:20 Millard 129, Bond

100 Elements of Preventive Medicine and Public Health. 5 credits. \$25.

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. This class meets for a 2½ hour period weekly. Prerequisite: 12 credits in biological science or consent of instructor.

Fall Semester

T 6:20 Millard 129, Cowan

HISTORY

Note—Although it is preferable that the units of these history classes be taken in sequence, students may register for credit in any single semester or quarter unit unless otherwise indicated.

1-2-3 Civilization of the Modern World. 3 credits each quarter. \$15.

1: The rise of the European state system as the framework within which Western civilization developed, and the economic, cultural, political, intellectual, and religious implications of the emerging system; 2: The struggle for control over the Western states system, and the emergence of liberal democracy in the modern world; 3: The impact of industrialism upon Western and world civilization, the origins and backgrounds of the twentieth-century world. No prerequisite. Class meets for 2½ hour period weekly.

Fall Quarter

1 T 6:20 Ford 140, Kohlmeyer

Winter Quarter

2 (same schedule as fall)

Spring Quarter

3 (same schedule as fall)

20-21-22 American History (or 59-60-61. See note below). 3 credits each quarter. \$15.

A survey of the political, economic, and social history of the United States with emphasis on the forces that resulted in the emergence of modern America. 20: Colonial and Early National Period; 21: Sectionalism and National Development; 22: Modern America. No prerequisite. Class meets for 2½ hour period weekly.

Note—Students wishing Senior College credit may register for History 59, 60, 61 with the approval of the instructor. Some additional work will be required for Senior College credit.

Fall Quarter

20 M 6:20 Ford 140, Heininger

W 6:20 St. P. Ext. Center

219, Heininger

Winter Quarter

21 (same schedule as fall)

Spring Quarter

22 (same schedule as fall)

79a-79b Foundations of National Power. 3 credits each semester. \$15.

A discussion of the present and potential strength of the major powers in the world today and of the areas of possible conflict. 79a: A brief survey of the rise of the modern state system will be followed by a more detailed evaluation of the geographic, social, political and military factors that constitute the elements of national power. An analysis will then be made of those states lying in the Western European and Mediterranean regions. No prerequisite. 79b: An analysis of the power potentials of states lying in Eastern Europe, Asia, the Far East, and the Western Hemisphere, with emphasis on the Soviet Union and the United States. No prerequisite, but 79a is recommended for full understanding of 79b.

Fall Semester

79a Th 6:20 Ford 160, Bowditch

Spring Semester

79b Th 6:20 Ford 160, Bowditch

95 American Diplomatic History. 3 credits. \$15.

The United States as a world power. A study of American foreign policy during the twentieth century. The Open Door, Dollar Diplomacy, the Roosevelt Corollary, the Good Neighbor, and the First and Second World Wars. No prerequisite.

Fall Semester

M 6:20 Ford 160, Beatty

109-110 Europe in the Twentieth Century. 3 credits each semester. \$15.

Course 109: 1900-1918; Course 110: 1918 to present. Background and causes of the First World War, history of Europe during four years of war, the Paris Conference and peace treaties, the new political and social order in central and eastern Europe, problems of the western democracies, the attempt at a new world order and its collapse, the background and history of the Second World War. No prerequisite.

Fall Semester
109 W 6:20 Ford 120, Deutsch

Spring Semester
110 W 6:20 Ford 120, Deutsch

118-119 History of World War II. 3 credits each semester. \$15.

118: Origins and backgrounds; the principal powers and their relationships; the rise of totalitarian ideologies and systems; international relations of the 1930's; how the war came; the period of Axis preponderance.

119: The breakdown of Nazi-Soviet relations; war in the East and at sea; decline of Axis fortunes; the U.S. entry; interrelation of European and Far Eastern wars; inter-allied relations; the battles of France and Germany; liquidation of the War; occupation problems and policies; affairs of the U.N.; relations of the victor powers and the peace settlements. No prerequisite.

Fall Semester
118 W 8:05 Ford 120, Deutsch

Spring Semester
119 W 8:05 Ford 120, Deutsch

125-126-127 Russian History. 3 credits each quarter. \$15.

125: The origins of the Slavs, the eastward movement and the rise of the principality of Moscow; 126: The Empire from Peter the Great through the Great Reforms of Alexander II; 127: From Alexander II to the present. No prerequisite.

Fall Quarter
125 M 6:20 Ford 170, Kohl-
meyer

Winter Quarter
126 (same schedule as fall)

Spring Quarter
127 (same schedule as fall)

185d-186d Minnesota and the Northwest. 3 credits each semester. \$15.

Begins with the period of exploration and the French, British, and American occupation. The fur trader and the voyageur; Indian missionary efforts of all denominations. A survey of early settlement and frontier life as well as the political and economic conditions in the territory and young state up to 1890. No prerequisite for 185d; those who wish credit in 186d must have passed 185d, others may register as auditors in 186d.

Fall Semester
185d Th 6:20 Ford 140, Nute

Spring Semester
186d Th 6:20 Ford 140, Nute

HOUSING**Planning Your Modern Home.** 2 Extension credits. \$10 plus 50 cents laboratory fee.

This is a nontechnical course prepared for those who plan to build, modernize, or redecorate their homes. The course will review the principles of planning and decorating and will investigate modern materials and techniques. It is intended to explain modern trends in residential design and to evaluate new developments so that home planners may invest their money wisely. Twelve meetings. No prerequisite.

Fall Quarter
T 8:05 Murphy Aud., Graffunder

Drawing Your Modern Home. 2 Extension credits. \$10.

The purpose of this course is to enable you to put down on paper and in intelligible form the plans for a modern home which you may have been turning over in your mind. Practice in sketching and in the minimum essentials of drafting. Typical conventions. The course is designed to supplement the preceding course, Planning Your Modern Home, but the latter is not prerequisite. Twelve meetings.

February 12-April 29
T 8:05 Main Engineering 304, Heath

Architectural Drafting I-II. See page 55.

Interior Design. See Art, page 14.

Gardening and Landscaping. See page 12.

HUMANITIES

Note—Although it is preferable that the Humanities courses be taken in sequence, this is not a requirement and any single unit or combination of units will prove satisfactory to students who wish to make such a selection.

1-2 Humanities in the Modern World I-II. 3 credits each semester. \$15.

This course offers an introduction to the study of the humanities in the modern world. The materials used are history, prose criticism, literature, and art. The period dealt with is from time of Voltaire to the present. The readings will include such authors as: for course I, Voltaire, Goethe, Paine, Rousseau, Burke, Tolstoi; for II, Dostoevski, Mill, Malthus, Marx, Ibsen, Zola, Flaubert. No prerequisite.

Fall Semester
1 M 6:20 Ford 80, Bryan

Spring Semester
2 M 6:20 Ford 80, Bryan

3 Humanities in the Modern World III. 3 credits. \$15.

Science (especially the theory of evolution), religion, and humanism. Study and discussion of selected works by Matthew Arnold and T. H. Huxley; William James, *Essays in Pragmatism*; Nietzsche, *Thus Spake Zarathustra*; G. B. Shaw, *Back to Methuselah*; Turge-
nev, *Fathers and Sons*; Thomas Mann, *The Magic Mountain*.

Fall Semester

T 6:20 St. P. Ext. Center 217, Ames
Th 8:05 Ford 20, Livingston

4 Humanities in the Modern World IV. 3 credits. \$15.

Science (especially Freudian psychology and anthropology), humanism, and the theory and practice of communism, fascism, and liberal democracy in the modern age. Study and discussion of Lenin, *State and Revolution*; Koestler, *Darkness at Noon*; Freud, *Outline of Psychoanalysis*; Benedict, *Patterns of Culture*; Ortega y Gasset, *Revolt of the Masses*; Camus, *The Plague*; Aldous Huxley, *Brave New World*.

Spring Semester

T 6:20 St. P. Ext. Center 217, Ames
Th 8:05 Ford 20, Livingston

12 The Roman and Medieval Heritage. 3 credits. \$15.

Epicureanism and stoicism; Roman jurisprudence and political organization; apostolic Christianity; the medieval synthesis. Readings: Lucretius, *On the Nature of Things*; Epictetus, *Enchiridion*; Marcus Aurelius, *Meditations*; Durant, *Caesar and Christ*; Barrows, *The Romans*; *New Testament*; St. Augustine, *Confessions*; Dante, *Divine Comedy* (Inferno); Chaucer, *Canterbury Tales*. No prerequisite.

Fall Semester

T 6:20 Ford 160, Livingston

13 The Renaissance Heritage. 3 credits. \$15.

The beginning of the "modern world." Humanism, individualism, skepticism and secularism; the use of capitalism and the national states; the Protestant Reformation; the new science; music and art of the Renaissance and Reformation. Readings in Rabelais, Machiavelli, Montaigne, Marlowe, Calvin, Luther, Hobbes, Cervantes and some secondary sources. No prerequisite.

Spring Semester

T 6:20 Ford 160, Livingston

21 American Life I. 3 credits. \$15.

The growth of individualism and democracy (with particular attention to minorities) as recorded in American history, social thought, literature, and the arts. No prerequisite.

Fall Semester

W 6:20 Ford 160, Keeler

22 American Life II. 3 credits. \$15.

The place in American civilization of work, the pursuit of happiness, the good life; their implications and interrelations. No prerequisite.

Spring Semester

W 6:20 Ford 160, Keeler

JAPANESE

See Linguistics, page 28.

JOURNALISM**18 Principles of Advertising. 3 credits. \$15.**

A basic foundation for beginners in advertising. Theory, principles, and functions of advertising. Relation of advertising to modern business organizations, schedules, campaigns. A survey of copy, layout, testing, and the laws affecting advertising. Prerequisite: consent of instructor.

Fall Semester

T 8:05 Murphy 308, Seehafer

65 Advertising Production Workshop. 3 credits. \$15 plus \$5 laboratory fee.

Letterpress, offset, and gravure printing processes; planning the engraving for promotion and advertising production; practice in layout and composition of advertisements in typography laboratory. Class limited to 20 students. Prerequisite: See note on page 27.

Fall Semester

Th 6:20 Murphy 105, Wilson

73 Magazine Writing I. 3 credits. \$15.

The theory and techniques of the nonfiction magazine article, for general and specialized periodicals; subjects and materials; practice assignments, manuscript criticism, editorial principles, basic instruction for beginners. Repeated in spring semester. No prerequisite.

Fall Semester
Th 6:20 Murphy 311, Kahm

Spring Semester
Th 6:20 Murphy 311, Kahm

Magazine Writing II. 3 Extension credits. \$15.

The writing of nonfiction articles for general and specialized periodicals; analysis of manuscript markets; study of magazine policies and practices; training in editing and marketing procedures; use of pictures. Prerequisite: Magazine Writing I or consent of instructor.

Fall Semester
Th 8:05 Murphy 311, Kahm

Writing and Marketing the Nonfiction Book. 3 Extension credits. \$15.

Subjects, organization of material, techniques of writing; marketing procedures, publishers' contracts. No prerequisite.

Spring Semester
W 6:20 Murphy 311, Kahm

78 Public Relations. 3 credits. \$15.

A survey of the techniques and practices of workers in the public relations field. The function of the public relations counsel and publicity expert and their relationship to the communications media, to employer and employee, consumer and citizen. The production of public relations programs and campaigns for business and industry, social work agencies, educational institutions, and government. Prerequisite: 13 or permission of instructor.

Fall Semester
W 8:05 Murphy 308, Emery

84 Mass Media, Their Audiences, Their Influence. 3 credits. \$15.

How Americans select newspaper, magazine, television, movie and radio content. Recent research results on audience response to mass media stimuli, and some of the effects of media content on informational levels, responses to advertising, and other types of behavior of groups.

Fall Semester
Th 6:20 Murphy 302, Jones

86 Advertising Copy and Layout. 3 credits. \$15.

Advertising media; advertising appeals; techniques of writing advertising copy for newspapers, periodicals, direct mail, posters, brochures. Layout and typography for those media. The advertising campaign, retail and national. Limited to thirty students. Prerequisite: Journalism 18 or Advertising Practice or B.A. 188 or acceptable advertising experience and consent of instructor. (See note below.)

Fall Semester
T 6:20 Murphy 308, Seehafer

87 Radio Advertising. 3 credits. \$15.

Radio advertising as related to the station, the network, the sponsor and advertising agency, the performer, and other broadcasting agencies. Time buying and selling; program selection. Radio advertising copy; development of campaigns. Attention to television as an advertising medium. Occasional lectures by advertising professionals. Limited to thirty students. Prerequisite: Journalism 18 or Advertising Practice or B.A. 188 or acceptable advertising experience and consent of instructor. (See note below.)

Spring Semester
W 6:20 Murphy 302, Seehafer

Note—In order that the students best qualified may be accepted under the limit of 30, registrations for this class will be accepted only provisionally and must be accompanied by a special form filled out by the applicant. Forms may be obtained from any Extension office. Students will be notified of their acceptance or rejection before the opening session. PLEASE REGISTER EARLY.

B.A. 188 Advertising. See Business Classes, page 45.

Creation of Advertising. See Business Classes, page 45.

LIBRARY SCIENCE**151 Invention and Spread of Printing. 2 credits. \$10.**

History of the development of printing and its spread to the end of the sixteenth century. No prerequisite. Twelve meetings.

Fall Quarter
W 6:20 Library 5, Shove

152 History of Printing to Modern Times. 2 credits. \$10.

The development and spread of printing and the publishing industry, 1600-1900. Twelve meetings. No prerequisite.

Winter Quarter

W 6:20 Library 5, Shove

LINGUISTICS**1-2 Beginning Japanese. 3 credits each semester. \$15.**

Introduction to conversational Japanese using romaji. Reading of Japanese texts. Instruction in writing of characters. Use of Chinese-Japanese character dictionary.

Fall Semester

1 M 6:20 Folwell 104, Syro-Boiarsky

Spring Semester

2 M 6:20 Folwell 302, Syro-Boiarsky

51-52 Reading in Japanese. 3 credits each semester. \$15.

Study of grammatical construction; drill in conversation; reading Japanese text. Prerequisite: Japanese 1-2 or consent of instructor.

Fall Semester

51 M 8:05 Folwell 104, Syro-Boiarsky

Spring Semester

52 M 8:05 Folwell 302, Syro-Boiarsky

1-2 Russian Reading. 3 credits each semester. \$15.

A beginning course with emphasis on reading. Comprehensive discussion of the Russian grammatical system, with special stress on the recognition of forms and the structure of the sentence. Interpretation and translation of easy texts. This course aims to give a general working knowledge of Russian and the basic preparation for reading tests required of graduate students in their specific fields. No prerequisite for 1. Prerequisite for 2: 1 or consent of instructor.

Fall Semester

1 M 6:20 Folwell 113, Blinoff

Spring Semester

2 M 6:20 Folwell 113, Blinoff

MATHEMATICS

For all mathematics classes, see page 57.

MUSIC**Practical Music.**

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 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 *Class Schedule*. For further information consult any office of the General Extension Division.

Enjoying Music (G.C. 24A-B). 3 General College or Extension credits each semester. \$15.

This is a class for those who wish to develop or increase their enjoyment and understanding of music as a means toward life enrichment. The lectures are carefully and completely illustrated by recordings. Students registered for this class are cordially invited to come early (any time between 7:00 and 8:00), during which time the instructor or an assistant will be present to play whatever recordings students may care to select from the extensive record library of the General College. Students may enter either semester. No prerequisite. Limited to 50 students.

Fall Semester

24A T 8:05 Nicholson 111, Hill

Spring Semester

24B T 8:05 Nicholson 111, Hill

34-35-36 History of Music. 3 credits each semester. \$15.

A course in historical appreciation, designed to give an understanding of musical masterpieces as part of the general development of western culture from the crusades to the present day. The lectures include copious musical illustrations with emphasis on the style of the music itself rather than theoretical questions. Parallels but does not duplicate Music 34-35-36 in the College of Science, Literature, and the Arts. No prerequisite.

Fall Semester

34-35 W 6:20 Scott Hall 104, Downes

Spring Semester

35-36 W 6:20 Scott Hall 104, Downes

40-41-42 University Symphony Orchestra. 1½ credits each semester. \$7.50.

Standard orchestral literature is performed. Open to players of orchestral instruments. Prerequisite: consent of instructor. Students enrolled in this course with the consent of the chairman of the Department of Music are given the opportunity of rehearsing with the University Symphony Orchestra and participating in several concert presentations during the year.

Fall Semester

40-41 T 7:00 Northrop Aud., Oberg

Spring Semester

41-42 T 7:00 Northrop Aud., Oberg

43-44-45 University Chorus. 1½ credits each semester. \$7.50.

The University Chorus is available to Extension students through the General Extension Division. Students may register for any unit number either semester upon consent of director.

Fall Semester
T 7:00 Nicholson Aud., Aliferis

Spring Semester
T 7:00 Nicholson Aud., Aliferis

Symphony Listeners Rehearsals. No credit. \$5.

This course is intended to furnish a background for and preview of Minneapolis Symphony concerts. The class will meet on the Thursday evenings directly preceding each of the regularly scheduled concerts, November 1-January 26 and February 24-April 10. Programmed works will be illustrated on the phonograph or piano and analyzed for form and structure. Historical and biographical data will be covered briefly but only insofar as they shed light on the music itself. Special attention will be paid to modern and unfamiliar works. Listening and discussion. No prerequisite.

November 1-April 10
Th 6:20 Scott Hall 104, Ivory

NATURAL HISTORY**Birds of Minnesota.** No credit. \$15.

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 *on Sunday mornings at 7:30.* No prerequisite.

Spring Semester
Th 6:20 Museum of Natl. Hist. 309, Breckenridge and Gunderson

Fish and Fishing in Minnesota. Extension credit by special arrangement. \$9.

A short course for sportsmen and others who want accurate—but nontechnical—knowledge of Minnesota fish; their habits and habitats, their feeding and propagation, their distribution and importance. Lectures, films, demonstrations, and discussions. 10 meetings beginning February 20. Enrolment limited to 100 accepted in order of registration. No prerequisite.

February 20-April 23
W 8:05 Zoology 313, Eddy

Wild Game of Minnesota. 2 Extension credits. \$10.

A nontechnical survey of the upland game birds, waterfowl, and mammals, particularly the fur bearers and big game of Minnesota; their habits, characteristics, and requirements. Recognition and conservation of principal game species will be discussed. Illustrated lectures and demonstrations. 12 meetings. No prerequisite.

Fall Quarter
W 6:20 Museum of Natl. Hist. 309, Gunderson

PERSONAL ORIENTATION**1 How to Study.** 3 Extension credits or 2 S.L.A. credits (see below). \$15.

Practical assistance to the student in developing efficient study habits, organizing materials, training the memory, preparing for examinations, and improving the speed and comprehension of reading. This course should be of special value to veterans and others who are planning an educational program and have not engaged in organized study for an extended period. Two credits may be granted in S.L.A. with consent of instructor. Class limited to 35. No prerequisite. Repeated spring semester.

Fall Semester
M 6:20 TSF 109, Melton
T 8:05 TSF 109, Melton

Spring Semester
M 6:20 TSF 109, Melton
T 8:05 TSF 109, Melton

Efficient Reading. 3 Extension credits. \$15 plus \$2 materials fee.

Designed for students, business, or professional people of up-to-average reading ability who wish to improve their reading speed and comprehension. Emphasis is on reading techniques of particular use in achieving or maintaining superior scholastic or professional status. Maximum use is made of the tachistoscope and the Harvard Reading Films, two recently developed visual aids. Parallels Efficient Listening and is a suggested follow-up for How to Study. No prerequisite. Class is limited to 30. Repeated spring semester.

Fall Semester
T 6:20 Wesbrook 206, Wright
T 8:05 Wesbrook 206, Wright
W 6:20 Wesbrook 206, Brown
W 8:05 Wesbrook 206, Brown
Th 6:20 St. P. Ext. Center 216, Wright
Th 8:05 St. P. Ext. Center 216, Wright

Spring Semester
T 6:20 Wesbrook 206, Wright
T 8:05 Wesbrook 206, Wright
W 6:20 Wesbrook 206, Brown
W 8:05 Wesbrook 206, Brown
Th 6:20 St. P. Ext. Center 216, Wright
Th 8:05 St. P. Ext. Center 216, Wright

Efficient Listening. 3 Extension credits. \$15.

The primary emphasis in this course is upon efficient listening to instructive and directive speech. Of particular value to those who wish to improve concentration when listening to lectures, dictated material, instructions orally presented. Half of each class session is occupied with lectures on such topics as inefficient listening and its causes, the desire to learn and learning economy, the elements of concentration, speech structuralization, comprehension of main points, four usable systems of note-taking and emotional adjustment to the speaker and his thesis. The other half of each class session is devoted to student performance.

Fall Semester
M 8:05 Folwell 12, Nichols

Spring Semester
M 8:05 Folwell 12, Nichols

F.L. 1 Preparation for Marriage. 3 credits. \$15.

A discussion of the function of the family today, problems of dating and courtship, the engagement, selection of a mate, relations of husband and wife, family crises and bases of marital stability. No prerequisite. Limited to 35 students.

Fall Semester
T 6:20 TSF 157, Dyer

Spring Semester
T 6:20 TSF 157, Neubeck

Modern Marriage. 3 Extension credits. \$15 plus \$1 materials fee.

A course designed for married people which gives consideration to selected problems of present-day married life, such as: management of family income, planning for children, compatibility, crises, etc. Illustrative films and case materials are used. Opportunity for individual conferences with the instructor is provided. Limited to 15 students. No prerequisite.

Fall Semester
T 6:20 TSF 159, Neubeck

Practical Speaking. See page 41.

Application of Psychology to Living Ia. See page 35.

Common Legal Problems. See page 46.

PHILOSOPHY**1 Problems of Philosophy.** 3 credits. \$15.

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

Fall Semester
M 8:05 Folwell 322, Conger

Spring Semester
Th 6:20 Folwell 322, Holmer

2 Logic. 3 credits. \$15.

There is a difference between "straight" and "crooked" thinking. Logic is the study of these differences. What pitfalls beset the attempt to think straight? When is a term properly defined? Why are sound definitions important? 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? Through systematic analysis of these and other related questions, the study of logic will show you what is involved in straight thinking. No prerequisite.

Fall Semester
Th 6:20 Folwell 322, Terrell

Spring Semester
W 6:20 Folwell 305, Brodbeck

3 Ethics. 3 credits. \$15.

Problems of life in terms of (1) contemporary social, political, and economic forces, and (2) the character of the individual; the psychological and philosophical foundations of morality; the reconstruction of morality; the history of morals and ethical thought. No prerequisite.

Fall Semester
T 6:20 Folwell 322, Hoppers

Spring Semester
T 6:20 Folwell 322, Holmer

54 Introduction to the Scientific Way of Thinking. 3 credits. \$15.

This class endeavors to clarify the meaning of modern science by examining its basic concepts, methods, and presuppositions. Only through such an integrative understanding can the dangers connected with high specializations be counteracted. Among the topics discussed are: principles of mature thinking; scientific procedures such as observation, measurement, experimentation, logical and mathematical reasoning, description, explanation, statistics, etc.; outstanding theories and problems of science; science, philosophy, religion, and social issues; the unity of science. No prerequisite.

Fall Semester
W 6:20 Folwell 322, Brodbeck

70 Philosophies of Social Reform. 3 credits. \$15.

An examination of the philosophical bases of liberalism, utopian socialism and democracy. No prerequisite.

Fall Semester

M 6:20 Folwell 322, Wiggins

71 Design for America. 3 credits. \$15.

A discussion of the aims of American life with the future as a frame of reference. Potentialities in economics, politics, art, science, and education in their interrelations. Student and faculty participation is stressed. No prerequisite.

Spring Semester

M 6:20 Folwell 322, Wiggins

87 Readings in Religious Classics. 3 credits. \$15.

A course designed to acquaint the general reader with several of the best literary expressions of religion. No attempt will be made to settle theological or sectarian issues. Emphasis will be placed on the understanding of each author's work as it relates to his life and that of his contemporaries. Selected readings are planned from the following works of authors of diverse temperament, persuasion, time and place: Augustine's *Confessions*, St. Francis' *Little Flowers*, Luther's *On Christian Liberty*, Pascal's *Pensees*, and Kierkegaard's *For Self-Examination*. No prerequisite.

Fall Semester

W 8:05 Folwell 305, Holmer

135 Philosophy in Modern Literature. 3 credits. \$15.

A survey of basic philosophical ideas in modern civilization as they are expressed in major works of literature. No prerequisite.

Spring Semester

M 8:05 Folwell 305, Terrell

Religions in the Modern World. 3 Extension credits. \$15.

In view of America's contacts with other nations and cultures in the present day, this course presents the distinctive viewpoints of religions which affect the conduct and thought of the peoples comprising the United Nations. Shinto, Taoism, Confucianism, Hinduism, Buddhism, Judaism, Christianity, Islam. No prerequisite.

Fall Semester

T 8:05 Ford 180, Allen

Religions in Minnesota. 3 Extension credits. \$15.

Salient beliefs, structure, and history of organized faiths in Minnesota are presented. The course aims to promote community understanding of divergent viewpoints regarding theology, education, and moral conduct. Attention is given to the relations between the state and established churches. No prerequisite.

Spring Semester

T 8:05 Ford 180, Allen

PHOTOGRAPHY

Students in all photography classes must furnish their own cameras.

Owing to the limited laboratory facilities available for the beginning and advanced cameracraft classes, and in order that students best qualified may be accepted under the limits indicated, registrations for these will be accepted only provisionally.

1. The beginning course will be limited to 24 students and the advanced to 16.
2. Registrations will be accepted only provisionally and must be accompanied by a special questionnaire filled out by the applicant.
3. Through the questionnaires, selected lists will be made of students qualified for either the beginning or advanced courses. These students will be notified in time to permit them to appear at the first class session.
4. If more than the maximum admissible number of students for either class are selected as qualified through the questionnaires, a further selection by means of special tests may be necessary at the time of the first class session.

Beginning Cameracraft (Art 10). 3 credits. \$15 plus \$5 laboratory fee.

A course for real beginners, those with little or no experience. Work will be about evenly divided between assigned experiments, approved personal projects, and lectures and demonstrations. Class enrolment limited to 24 selected students (see note above).

Fall Semester

M 6:20 Murphy 20, Downs

Spring Semester

M 6:20 Murphy 20, Downs

Advanced Cameracraft (Art 11). 3 credits. \$15 plus \$5 laboratory fee.

A course for established amateurs with some experience and familiarity with special photographic equipment and techniques. Work will include some assigned projects, lectures and demonstrations, but special attention will be given to individual interests and requirements. Class enrolment limited to 16 selected students (see note above).

Fall Semester
W 6:20 Murphy 20, Leibling

Spring Semester
W 6:20 Murphy 20, Leibling

Applied Photography I. 3 Extension credits. \$15 plus \$2.50 laboratory fee.

A course designed for practicing amateur photographers who wish to improve their skill in all fields of monochrome photography. In addition to lectures and demonstrations, students will have an opportunity to work in laboratory classes under the guidance of an experienced instructor. Time will be devoted to portraiture, architecture, landscape, news and illustration photography. There will be lecture and laboratory periods on retouching, mounting, and darkroom work. Enrolment limited to 25 students. Prerequisite: Beginning Cameracraft or equivalent with consent of instructor. *Students must have adequate access to darkroom facilities.*

Fall Semester
W 7:00 Wesbrook 3, Webb

Applied Photography II. 3 Extension credits. \$15 plus \$2.50 laboratory fee.

This course is designed for those who wish to become proficient in the growing field of color photography. Lectures and laboratory periods on all phases of photography, darkroom work, and photofinishing in the color medium. Field trips under the instructor's supervision will replace some class sessions. Enrolment limited to 25 students. Prerequisite: Applied Photography I or equivalent with consent of instructor. *Students must have adequate access to darkroom facilities.*

Spring Semester
W 7:00 Wesbrook 3, Webb

Motion Picture Photography. 3 Extension credits. \$15 plus \$2.50 laboratory fee.

Designed to meet the needs of teachers interested in the visual field and amateur motion picture photographers in general. The course will cover the requirements of good cinematography, with laboratory sessions on proper editing techniques, special effects, and titling. The student will be required to expose approximately three 100-foot rolls of 16 mm. or three 25-foot rolls of 8 mm. motion picture film. These movies will be criticized periodically by the instructor. Beginning photography desirable but not essential. Enrolment limited to 25 students.

Fall Semester
Th 7:00 Wesbrook 3, Stallings

Motion Picture Laboratory. 3 Extension credits. \$15 plus \$7.50 laboratory fee.

This course is designed for the advanced amateur who needs practical experience in motion picture production. The class produces a 16 mm. motion picture on a subject chosen by the instructor. All phases of work including actual photography, editing, and directing are included. All film and material are furnished by the Extension Division. Narrative sound is added to the picture if time allows. Prerequisite: Motion Picture Photography or equivalent in experience with approval of instructor.

Spring Semester
Th 7:00 Wesbrook 3, Stallings

PHYSICS**1-2†-3 Introduction to Physical Sciences.** 3 credits each quarter. \$15.

Lectures and experimental demonstrations of the principles underlying physical phenomena. A course designed for those who wish a general cultural introduction to physics but do not plan to major in that subject. Physics 1 (mechanics); Physics 2 (heat, electricity and modern physics); Physics 3 (acoustics, optics, and modern physics). Class meets for 2½ hours. Prerequisite: high school algebra and plane geometry.

Fall Quarter **Winter Quarter** **Spring Quarter**
1 T 6:20 Physics 166, Christensen 2 (same schedule as fall) 3 (same schedule as fall)

1a-2a†-3a Introduction to Physical Sciences. (With laboratory included.) 4 credits each quarter. \$25.

The complete sequence 1a-2a-3a fulfills the laboratory-science group requirement in S.L.A. Lecture group meets with class described above. Eight 2-hour laboratory periods scheduled for the quarter. Prerequisite: high school algebra and plane geometry.

Fall Quarter **Winter Quarter** **Spring Quarter**
1a T 9:00 Physics 153 2a (same schedule as fall) 3a (same schedule as fall)

† See Information, page 6.

103A Introduction to Theoretical Physics. 3 credits. \$30.

An analytical survey of fundamental principles of mechanics, sound, heat, light, electricity, and magnetism, designed to supplement the general course and to prepare students for more specialized graduate courses. Prerequisite: Physics 101A and admission to the Graduate School.

Fall Semester

Th 7:00 Physics 133, Freier

Practical Laboratory Instrumentation. See Chemistry, page 18.

POLITICAL SCIENCE

Note—Qualified students may petition for graduate credit in political science courses numbered over 50. Action should be taken as soon as class begins. Consult Students' Work Committee for correct procedure.

1† American Government and Politics: Part I. 3 credits. \$15.

All of us are aware of the impact of international events upon the American system of government and the tremendous part that government plays in our lives. This course is designed to provide an intelligent understanding of certain fundamental features of our governmental system: the nature of our constitution, the protection of individual rights and liberties, political parties, public opinion, nominations and elections. Special attention will be given throughout to current developments. No prerequisite.

Fall Semester

M 6:20 Ford 30, Christensen

2 American Government and Politics: Part II. 3 credits. \$15.

Recognizing that the American citizen must have an understanding of our system of government if he is to play an active and intelligent part in helping it meet the problems of the future, this course is designed to provide a description, analysis, and evaluation of the legislative, executive, and judicial branches of our government (national, state, and local) with special attention to current developments. No prerequisite.

Spring Semester

M 6:20 Ford 30, Taylor

7 Comparative European Government. 3 credits. \$15.

An introduction to, and analysis of, the government and politics of Europe, particularly of England, France, Italy, Germany and the Scandinavian countries. Attention will be given to fundamental principles, institutional character and tendencies, parties and contending ideologies, the internal power relations, etc.

Fall Semester

M 6:20 Ford 60, Turner

15 Elements of Political Science. 3 credits. \$15.

An introductory study of the state, sovereignty and liberty, constitutions, the forms of government, and the functions of the state; principles and practices, purposes and institutions, the place which the modern state should occupy in society and the means of the attainment of that position. No prerequisite.

Fall Semester

T 8:05 St. P. Ext. Center 217, Tucker

25 World Politics. 3 credits. \$15.

Significance of contemporary events abroad and their effect on American interests. Implications of the Yalta, San Francisco, Potsdam, and other conferences. Schedule of lectures will be altered to explain current developments and trace causes. No prerequisite.

Fall Semester

W 6:20 Ford 80, Mills

55 Government of the Soviet Union. 3 credits. \$15.

An analysis of the government and politics of Soviet Russia that seeks to explain the rise of Bolshevism; the sources and nature of its ideology; the history of the Communist regime, institutional character; the organization of power; the role of the party; foreign, economic, and cultural policies; significance for Western Civilization. No prerequisite. (See note above.)

Spring Semester

M 6:20 Ford 60, Turner

61 Municipal Law and Administration. 3 credits. \$15 plus \$1 materials fee.

General principles of municipal administration; forms of administrative organization and control; the framework within which municipal government operates, including home-rule charters and state statutes; liability of the municipality and its officers for wrongful acts; specific administrative services, such as personnel, budgeting and finance, research and planning, and public reporting. Intended primarily for persons in municipal government, the course is of interest also to citizens seeking a better understanding of how municipal government is administered and the important work it performs. Emphasis throughout is on Minnesota law and practice. No prerequisite. (See note above.)

Spring Semester

W 6:20 Ford 60, Peterson

† See Information, page 6.

62 Public Personnel Administration. 3 credits. \$15.

Development and significance of the public service; organization for personnel management; classification of positions; pay standardization and administration; recruitment, examination, and placement; in-service training; evaluation of performance; conditions of employment; separations; human relations and morale; employee organization; obligations and responsibilities of public employees; retirement systems. (See note on page 33.)

Fall Semester

M 6:20 Ford 50, Short

63 Public Financial Administration. 3 credits. \$15.

With emphasis on municipal practice, course surveys subjects of purchasing, contracting, revenues, taxation, special assessments, service charges, borrowing, expenditures, budgeting, accounting, cost accounting, auditing, and reporting. (See note on page 33.)

Spring Semester

Th 6:20 Ford 50, Ludwig

65 Government of Minnesota. 3 credits. \$15.

An analysis of the structure and functions of state units. Discussion of such problems as legislative organization and procedure; the executive and the administration; personnel problems; political parties; taxation and finance. Emphasis on the changing relationships between city and state, and state and nation. No prerequisite. (See note on page 33.)

Spring Semester

Th 8:05 Ford 40, Tucker

75 Local Government in the United States. 3 credits. \$15.

The status and importance of local government in the United States; city governmental, administrative, and political organization; city and county politics and "bosses"; the problem of city government reorganization with special reference to the Twin Cities; the campaign for the council-manager type of city government; the functions of local government—law enforcement, public welfare, housing and city planning, etc.; city financial organization and problems; threats to municipal home rule. No prerequisite. (See note on page 33.)

Spring Semester

T 8:05 St. P. Ext. Center 217, Tucker

76 Business and Government. 3 credits. \$15.

A survey of the impact of government on the American economy. Topics dealt with include factors conditioning the role of government, the problem of depressions, labor and government, government and agriculture, monopoly and giantism, public utility regulation, financial controls, conservation, public ownership, and national economic planning. Attention is focused on current major economic issues of national interest and public policy. (See note on page 33.)

Spring Semester

M 6:20 Ford 75, Warp

80 American National Government. 3 credits. \$15.

A study of the organization, functions, processes, and problems of the national government—the determination of its policies and their administration. No prerequisite. (See note on page 33.)

Fall Semester

Th 8:05 Ford 40, Tucker

84 International Organization I. 3 credits. \$15.

Historical development of arbitration and administrative agencies, and conferences; the League of Nations; the United Nations and regional organizations. No prerequisite. (See note on page 33.)

Fall Semester

M 6:20 Ford 40, Levi

85 Problems of World Politics. 3 credits. \$15.

Continuation of Political Science 25 which, however, is not prerequisite. Special attention to Southern Asia. No prerequisite. (See note on page 33.)

Spring Semester

W 6:20 Ford 180, Mills

86 International Organization II. 3 credits. \$15.

Organization and work of the specialized agencies of the United Nations: Educational, Scientific and Cultural Organization; Economic and Social Council; Trusteeship Council; Health Organization. International administration. No prerequisite. (See note on page 33.)

Spring Semester

M 6:20 Ford 40, Levi

98 Conduct of American Foreign Relations I. 3 credits. \$15.

Organization and work of the Department of State, trends in recent reorganizations; the Foreign Service; diplomatic and consular functions and problems; special foreign affairs agencies; relations with international organizations. No prerequisite. (See note on page 33.)

Fall Semester

T 6:20 Ford 50, McLaughlin

99 Conduct of American Foreign Relations II. 3 credits. \$15.

Treaties and executive agreements; the role of public opinion, political parties and pressure groups, Congress and Congressional committees, and executive leadership in the formation of foreign policy; the problem of democratic control of foreign policy; analysis of procedures and controlling forces in recent examples of American foreign policy. No prerequisite. (See note on page 33.)

Spring Semester

T 6:20 Ford 50, McLaughlin

PSYCHOLOGY**1a Application of Psychology to Living.** 3 credits. \$15.

This course is devoted to psychology in personal relationships and in the achievement of mental health. It centers, for the most part, around our fundamental needs—the source of all our actions and satisfactions—and it presents principles highly applicable in the life of every person. This course has no prerequisite, and it may be taken with the same satisfaction before or after Psychology 1-2. Repeated spring semester. Elective credit in S.L.A. Not to be confused with Elementary Psychology A.

Fall Semester

M 6:20 St. P. Ext. Center 206, White
T 6:20 Nicholson 213, White
Th 8:05 Nicholson 213, White

Spring Semester

M 8:05 Nicholson 213, White
T 8:05 St. P. Ext. Center 206, White
Th 6:20 Nicholson 213, White

1-2† General Psychology. 3 credits each semester. \$15.

This course is designed to orient the student to the whole field of psychology. Its emphasis is upon methods of investigation. Required for most other courses in psychology. No prerequisite.

Fall Semester

1 W 6:20 Nicholson Aud., White
F 7:00 St. P. Ext. Center 206, White

Spring Semester

2 W 6:20 Nicholson Aud., White
F 7:00 St. P. Ext. Center 206, White

4-5† Introductory Laboratory Psychology. 2 credits each semester. \$15.

Experiments illustrating the subject matter and methods of the psychology of today. Each student interprets his own performances with respect to general ability, special abilities (mechanical, clerical, artistic, etc.), interests, and personality traits. Supplies the laboratory experience necessary for using psychology as the natural science requirement in the Junior College. May be taken with or after Psychology 1-2.

Fall Semester

4 W 8:05 Psychology 211, Rosen

Spring Semester

5 W 8:05 Psychology 211, Rosen

119 Psychology of Personality. 3 credits. \$15 plus \$1 laboratory fee.

Designed to dissolve the halo of mystery surrounding the concept of personality, to the end that persons may better understand themselves and those they influence. Personality factors in relationship to business, family, and marital life. Special study of the many conditions, cultural and biological, which produce the varied traits distinguishing one person from another. Emphasis upon the importance of early experiences in forming character. Prerequisite: Psychology 1-2.

Fall Semester

W 8:05 Psychology 115, Heron

122-123† Vocational Development and Personnel Psychology. 3 credits each semester. \$15 plus \$1 laboratory fee.

Deals with selecting, counseling, training, and maintaining an efficient labor force in industry. Theory and practice of giving, interpreting, and evaluating psychological tests and of interviewing; constructing and using rating scales; training, maintaining, and promoting employees. There will also be actual practice in the use of psychological tests. Not open for credit to those who have taken Psychology 160-161 for credit. Prerequisite: consent of instructor.

Fall Semester

122 M 6:20 Psychology 211, Longstaff

Spring Semester

123 M 6:20 Psychology 211, Longstaff

125-126 Psychology of Individual Differences. 3 credits each semester. \$15.

Asks how and why people differ. Deals with factors such as age, sex, race, heredity, and environment and how these are related to differences in ability and temperament. These differences are important in personnel work, vocational counseling, and in industrial relations. May be used for elective credit toward a Certificate in Industrial Relations. Prerequisite: Psychology 1-2.

Fall Semester

125 T 6:20 Psychology 115, Jenkins

Spring Semester

126 T 6:20 Psychology 115, Jenkins

144-145† Abnormal Psychology. 3 credits each semester. \$15.

Normal and abnormal behavior contrasted; varieties of maladjustment, or inadequacies of personality as shown in everyday life, contrasted against the background of neurotic and psychotic persons in order to consider programs of mental hygiene. Prerequisite: Psychology 1-2.

Fall Semester

144 M 8:05 Psychology 115, Schofield

Spring Semester

145 M 8:05 Psychology 115, Schofield

† See Information, page 6.

167 Psychology of Attitudes and Public Opinion. 3 credits. \$15.

Emphasis is placed on how opinions develop and on social aspects of polling as well as on such survey techniques as sampling methods and question formulation. Application of polling methods to consumer studies and to measurement of industrial morale is considered. No prerequisite; elementary statistics desirable.

Spring Semester
Th 6:20 Psychology 115, Jones

RADIO AND TELEVISION**Writing for Radio and Television I.** 3 Extension credits. \$15 plus \$1 laboratory fee.

Here is practical "how to do it" instruction in writing for radio and television based upon long professional experience in both fields. Class operates like a "workshop" where both professionals and beginners can find real incentive to write. Students are given the fundamentals of writing for the ear (radio) and for both the eye and ear (TV); then they put these techniques into practical use by actually writing a full 17-week schedule of radio and TV scripts. Designed for radio and television writers or those who plan to do such writing, for educators, advertising men and women, public service executives, anyone interested in communication. Students are urged to select script subjects that fit their particular interests or jobs. Each writer begins with short announcements; then progresses through various announcement forms into short and longer programs of drama, comedy, interviews, music, etc. You get practical advice on handling radio sound effects and music, and suggestions on how to make the television camera work most effectively for you. Constant survey and discussion of current radio and television with emphasis on new developments in each. Seventeen-week course is climaxed by an "audition" of selected work each semester. Particular scripts may be presented on KUOM or other suitable stations. Prerequisite: a good command of English, and a desire to write. Repeated spring semester.

Fall Semester
T 6:20 Murphy 302, Weaver

Spring Semester
T 8:05 Murphy 302, Weaver

Writing for Radio and Television II. 3 Extension credits. \$15 plus \$1 laboratory fee.

Basic plan: writing a series of 15-minute or longer programs for consecutive presentation. The course may be used by active script writers to get unhampered criticism of their work before it is submitted to station or network, or sponsoring agency or business firm. Frequently used as refresher course by writers and former students. Emphasis on skillful use of the elements of the respective mediums: in radio, the spoken word, sound effects, and music; in television, the camera, or visual appeal, plus the spoken lines, sound effects, and music. Participants are urged to set up projects in their own fields of interest or employment. Experimentation in new program patterns encouraged. Selected work presented in attractive "audition" program each semester. Approved scripts frequently presented on KUOM or other suitable stations. Prerequisite: I to precede II, II to precede III when offered.

Spring Semester
T 6:20 Murphy 302, Weaver

Radio and Television Speech (Speech 65). 3 credits. \$15 plus \$1 laboratory fee.

Speech and psychology of radio and television; announcing; interpretative reading, voice, diction, articulation, and pronunciation. Practice, exercises, projects, and reports on problems of appeal and audience response. Voice recordings will be made. Enrolment limited to 25. Repeated spring semester. Prerequisite: Speech 1-2, or consent of instructor.

Fall Semester
W 6:20 Station WCCO, Ziebarth

Spring Semester
W 6:20 Station WCCO, Ziebarth

Radio Drama (Speech 66). 3 credits. \$15.

A study of the methods and techniques involved in the production of radio dramatic programs. Students participate in all phases, including acting, sound effects, music selection, script analysis and production directing. Prerequisite: Speech 1-2 or consent of instructor.

Fall Semester
W 6:20 Murphy 302

RECREATION

Note that the recreational activities are offered in three groups: for women only, for both men and women, for men only. Unless otherwise designated, all classes meet one hour per week, carry no credit, and require no prerequisites. Information about lockers and health examinations will be given at first class meeting.

Activities Open Only to Women**Golf (Beginning)—for Women.** \$7.50 plus \$1.75 special fee.

Class and individual instruction in the use of the brassie, midiron, mashie, and putter. Discussion of rules, golf etiquette, and terminology. Last few lessons in spring at University Golf Course. Sections limited to 20. Equipment (clubs and soft balls) furnished by students. Repeated spring semester.

Fall Semester
T 5:30 Norris Gym. 60, Tenney
T 6:30 Norris Gym. 60, Tenney

Spring Semester
T 5:00-5:45 Norris Gym. 60, Lampe
T 6:30-7:15 Norris Gym. 60, Lampe
W 5:45-6:30 Norris Gym. 60, Clapper
W 6:30-7:15 Norris Gym. 60, Clapper
Th 5:00-5:45 Norris Gym. 60, Tenney
Th 5:45-6:30 Norris Gym. 60, Tenney

Golf (Intermediate)—for Women. \$7.50 plus \$1.75 special fee.

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. Sections limited to 20. Prerequisite: some knowledge of and experience in golf.

	Spring Semester	
T	5:45-6:30	Norris Gym. 60, Lampe
W	5:00-5:45	Norris Gym. 60, Lampe
Th	6:30-7:15	Norris Gym. 60, Tenney

Relaxation Techniques for Tension—for Women. \$7.50 plus \$1.75 special fee.

Procedures for relaxing the body, individual programs of exercise for general body control with special emphasis on streamlining the figure; posture, carriage. Repeated spring semester.

Fall Semester		Spring Semester			
T	6:00	Norris Gym. 153, Bockstruck	T	6:00	Norris Gym. 153, Bockstruck

Swimming for Girls. \$7.50 plus \$1.75 special fee.

A course in swimming for girls between the ages of 6 and 12 years. A health examination for which a fee of 50 cents is charged will be given at the first class meeting. Second meeting will be for the purpose of classifying swimmers into the following groups: beginners; advanced beginners (those who are at home in shallow water); intermediate swimmers (those who are at home in deep water). Swimmers may bring their own suits. Caps are required for all swimmers. Classes are limited to 20 girls in each section.

Fall Semester		Spring Semester			
Beginners		Beginners			
S	8:45-9:30	Norris Gym. 51, Lampe	S	8:45-9:30	Norris Gym. 51, Lampe
Advanced Beginners		Advanced Beginners			
S	9:30-10:15	Norris Gym. 51, Lampe	S	9:30-10:15	Norris Gym. 51, Lampe
Intermediate Swimmers		Intermediate Swimmers			
S	10:15-11:00	Norris Gym. 51, Lampe	S	10:15-11:00	Norris Gym. 51, Lampe

Swimming (Beginning and Advanced Beginning)—for Women. \$7.50 plus \$1.75 special fee.

For beginners and those who want to increase their skill in strokes and diving. A health examination, for which a fee of 50 cents is charged, will be given at the first class meeting. Sections limited to 30. Repeated spring semester.

Fall Semester		Spring Semester			
T	6:00	Norris Gym. 51, Larson	T	6:00	Norris Gym. 51, Larson
T	7:00	Norris Gym. 51, Larson	T	7:00	Norris Gym. 51, Larson
			W	6:00	Norris Gym. 51, Tinker
			Advanced Beginning		
			W	7:00	Norris Gym. 51, Tinker

Swimming (Intermediate and Advanced)—for Women. \$7.50 plus \$1.75 special fee.

A course for those who know how to swim but wish to learn new strokes or polish up on those they already know. Instruction in diving and water safety included. Sections limited to 30. Repeated spring semester.

Fall Semester		Spring Semester			
W	6:00	Norris Gym. 51, Spears	W	6:00	Norris Gym. 58, Spears
W	7:00	Norris Gym. 51, Spears	W	7:00	Norris Gym. 58, Spears

Synchronized Swimming and Water Ballet—for Women. \$7.50 plus \$1.75 special fee.

Instruction in, and adaptation of, strokes and aquatic activities of synchronized and water ballet swimming. Experience in developing group and individual routines. Sections limited to 30. Repeated spring semester.

Fall Semester		Spring Semester			
T	6:00	Norris Gym. 58, Starr	T	6:00	Norris Gym. 58, Starr
T	7:00	Norris Gym. 58, Starr	T	7:00	Norris Gym. 58, Starr

Tennis (Beginning)—for Women. \$7.50 plus \$1.75 special fee.

Group and individual instruction. First eleven weeks' instruction given indoors; last six weeks at the university tennis courts. Individual practice for the improvement of strokes; working with tennis robot. Students furnish own tennis rackets and balls. Tennis permits are necessary if university courts are used. Consult instructor.

Spring Semester		
T	5:30	Norris Gym. 151, Hauptfuehrer

Tennis (Intermediate)—for Women. \$7.50 plus \$1.75 special fee.

Group and individual instruction for those who have elementary skills. Practice on courts. Tennis permits are necessary if university courts are used. Consult instructor.

Spring Semester		
T	6:30	Norris Gym. 151, Hauptfuehrer

Activities Open to Men and Women**Badminton Club—for Men and Women. One period, 6 months, \$12.50.**

Four periods per week, as scheduled below, will be devoted to playing 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., Cooke Hall gymnasium, Monday and Friday, beginning October 1 and continuing through March with a recess at Christmas. In addition to the regular class periods, those registered may use the badminton courts when available for general intramural play. In charge: Smith, Bowman.

Activities Open Only to Men**Golf—for Men. \$10 plus \$1 materials fee.**

The fundamentals of golf. Motion pictures or stereopticon slides show proper form of stroke. Eight to ten meetings for pictures, lectures, etc., will be held on Monday nights beginning February 11. Lessons or appointments with competent golf instructors in the golf gymnasium will be scheduled for Tuesday, Wednesday, Thursday, or Friday evenings between February 11 and April 8. The last five meetings will be held, weather permitting, at the University Golf Course, where various professionals will assist. The outdoor schedule is adjusted to light. Students will furnish their own clubs.

Spring Semester

M 7:00 Physics Aud., Smith

Squash—for Men. One period, four months, \$7.00.

Class and individual instruction will be given to beginners. Scheduled play will be arranged for the more advanced. Play in addition to the class hour may be arranged with the instructor.

November 30-March 28

F 5:00 Cooke Hall—Stadium Courts, Smith

Swimming—for Men. \$7.50.

Class and individual instruction for beginners in all swimming strokes, in diving, in senior lifesaving; preparation for Red Cross examinations. Woolen bathing suits not permitted. Health examination at first meeting. Other sections arranged on demand.

Spring Semester

T 8:05 Cooke Hall, Boyce

Swimming for Boys. \$7.50.

A course for boys 6 to 12 years of age and at least 48 inches tall. The first meeting will be for the purpose of classifying swimmers into the proper groups: beginning, intermediate, advanced. Swimmers are required to bring their own towels.

Spring Semester

Beginners and Intermediate
S 10:00 Cooke Hall, Ostrander
Advanced
S 11:00 Cooke Hall, Boyce

RUSSIAN

See Linguistics, page 28.

SCANDINAVIAN**13-14 Beginning Danish. 3 credits each semester. \$15.**

This course will be taught according to modern language teaching methods with emphasis on the oral approach. Its aim will be to enable the student to understand and take part in a simple conversation and to read a newspaper text. Attention will be given to individual requirements. No prerequisite.

Fall Semester

13 Th 6:20 Folwell 12, Aarsleff

Spring Semester

14 Th 6:20 Folwell 12, Aarsleff

15-16 Intermediate Danish. 3 credits each semester. \$15.

This course is designed for students with some previous knowledge of Danish, whether acquired in last year's course in Beginning Danish or elsewhere. Equal attention will be paid to conversation and reading of modern Danish, primarily through recent newspaper and periodical texts. Attention will be given to individual requirements.

Fall Semester

15 Th 8:05 Folwell 12, Aarsleff

Spring Semester

16 Th 8:05 Folwell 12, Aarsleff

17-18 Beginning Finnish. 3 credits each semester. \$15.

Intended for beginners with little or no previous knowledge of Finnish; stresses fundamentals of grammar, correct pronunciation, reading, practice in conversation and simple composition. No prerequisite.

Fall Semester
17 T 6:20 Folwell 102, Halonen

Spring Semester
18 T 6:20 Folwell 102, Halonen

19-20 Intermediate Finnish. 3 credits each semester. \$15.

Grammar reduced to a minimum, emphasis on reading and conversation, some composition, readings from modern Finnish authors.

Fall Semester
19 Th 6:20 Folwell 102, Halonen

Spring Semester
20 Th 6:20 Folwell 102, Halonen

1-2 Beginning Norwegian. 3 credits each semester. \$15.

This course, intended for students who have little or no previous knowledge of Norwegian, stresses spoken Norwegian, but provides in addition the essentials of grammar and some practice in simple composition. No prerequisite.

Fall Semester
1 W 6:20 Folwell 12, Eikaas

Spring Semester
2 W 6:20 Folwell 12, Eikaas

3-4 Intermediate Norwegian. 3 credits each semester. \$15.

Designed for students with some theoretical and practical knowledge of Norwegian. Provides a rapid review of grammar and considerable practice in conversation and composition. Readings in Norwegian.

Fall Semester
3 W 8:05 Folwell 12, Eikaas

Spring Semester
4 W 8:05 Folwell 12, Eikaas

5-6 Readings in Norwegian Literature. 3 credits each semester. \$15.

Designed to serve as an introduction to Norwegian literature, and to provide also training in reading modern Norwegian. Prerequisite: Norwegian 3-4 or a good reading knowledge of Norwegian.

Fall Semester
5 F 6:20 Folwell 12, Eikaas

Spring Semester
6 F 6:20 Folwell 12, Eikaas

7-8 Beginning Swedish. 3 credits each semester. \$15.

Intended primarily for beginners in Swedish. A minimum of grammar, with emphasis on simple composition and conversation, and some reading of elementary selected prose. No prerequisite.

Fall Semester
7 T 6:20 Folwell 12, Gustafson

Spring Semester
8 T 6:20 Folwell 12, Gustafson

9-10 Intermediate Swedish. 3 credits each semester. \$15.

This course is designed either for students who have completed 7-8 or its equivalent, or for those who have a reasonable practical working knowledge of Swedish. Review of fundamentals of grammar, together with conversation and composition and readings in Swedish literature. Prerequisite: Swedish 7-8 or equivalent.

Fall Semester
9 T 8:05 Folwell 12, Gustafson

Spring Semester
10 T 8:05 Folwell 12, Gustafson

SOCIAL WORK**70 Introductory Psychiatry.** 3 credits. \$15.

A lecture course, the subject matter of which includes a discussion of mental hygiene, mental mechanisms; psychiatric history taking; review of schools of psychiatry; classification of mental diseases. No prerequisite.

Spring Semester
T 6:20 Ford 150, Magraw

91 Case Method Applied to the Study of Human Problems. 3 credits. \$15.

The general application of the interviewing method for students who plan to work professionally in fields involving human relationships, as Social Work, Public Health Nursing, Speech Pathology, etc. Prerequisite: Social Work 50 or 51 or consent of instructor.

Fall Semester
M 6:20 Ford 150, Saloshin

Note—Classes listed below are open to persons employed in social work positions who are approved by an adviser in the School of Social Work. Credit in certain university departments may be granted by application upon successful completion of these courses. Students interested in this should consult their department advisers before registration.

92 Working with Groups. 3 credits. \$15.

A study of the application of the group work method for students who are workers in children's institutions, settlement houses, informal educational and recreational agencies. Includes discussion of some basic mental hygiene concepts, programming according to individual needs and other practical problems. No prerequisite.

Fall Semester

T 9:00-11:00 a.m. Ford 50, Cohn

93 Supervision of Staff. 3 credits. \$15.

Supervision of professional and volunteer staff members in group work agencies and child-caring institutions. Principles of supervision and their application to individual conferences, group conferences, staff meetings, and in-service training. Open to those in supervisory positions in group work agencies and child-caring institutions. Enrollment limited to 25.

Spring Semester

T 9:00-11:00 a.m. Ford 50, Pernell

176 Dynamics of Human Behavior Based on Psychoanalytic Theory. 3 credits. \$15.

The application of psychoanalysis in the understanding of abnormal behavior; the lectures deal with normal and abnormal behavior, especially in relation to problems met by the social worker and teacher. Prerequisite: 6 credits in sociology and 6 credits in psychology and consent of an adviser in the School of Social Work. Both sections limited to 25. (See note below.)

Fall Semester

Th 6:20 St. P. Wilder Clinic, 670
Marshall Ave., Lippman

Spring Semester

T 6:20 N.W. Bank Bldg. 690, Sukov

Note—In order that the students best qualified may be accepted under the limit of 25, registrations for this class will be accepted only provisionally and must be accompanied by a special form filled out by the applicant. Forms may be obtained from any Extension office. Students will be notified of their acceptance or rejection before the opening session. PLEASE REGISTER EARLY.

SOCIOLOGY**1 Introduction to Sociology. 3 credits. \$15.**

A study of the characteristics of human group life. An analysis of the factors associated with the development of human group life and man's social environment; the structure of the social environment and its influence upon the individual's behavior; the processes involved in social change and the social problems that accompany social change. A survey of the fundamental social institutions, such as the family and the church; the development and decline of social institutions; change in the institutional functions and social disorganization. Repeated spring semester. No prerequisite.

Fall Semester

T 8:05 St. P. Ext. Center 216, Taves
Th 6:20 Ford 20, Caplow

Spring Semester

T 6:20 Ford 20, Caplow

14 Sociology of Rural Life. 3 credits. \$15.

Presentation of the factual data necessary to understanding the problems of modern rural social life in the United States. The social processes, stratification, assimilation, conflict, and cooperation as manifested in rural society will be emphasized. Prerequisite: Sociology 1 or equivalent.

Spring Semester

Th 6:20 Ford 170, Marshall

49 Social Problems. 3 credits. \$15.

A survey course in contemporary social problems with special emphasis on personal demoralization and social disorganization.

Spring Semester

T 6:20 St. P. Ext. Center 214, Taves
Th 6:20 Ford 180, Caplow

111 Population Trends. 3 credits. \$15.

This course emphasizes the cultural and social phases of population change with particular reference to birth rates, death rates, and migration. The implications of population change are also discussed. Prerequisite: Sociology 1 and 15 credits in social science.

Spring Semester

Th 8:05 Ford 170, Marshall

145 Urban Sociology. 3 credits. \$15.

An introduction to the study of the city as a social organization. Emphasis is given to the analysis of urbanism as a way of life, and to the relationship between spatial and social configurations. A brief research project under supervision, using material drawn from the Twin Cities is required. Prerequisite: Sociology 1 and 15 credits in social science.

Fall Semester

T 6:20 Ford 20, Caplow

170 Social Life and Cultural Change. 3 credits. \$15.

A study of recent social trends in the United States with emphasis upon their relationships to problems of human welfare, social control, and social reorganization. The theory of cultural lag and the idea of progress, etc. Prerequisite: Sociology 1 and 15 credits in social science, child welfare, education, philosophy, psychology, or consent of instructor.

Spring Semester

W 6:20 Ford 170, Olmsted

SPANISH

1-2 Beginning Spanish. 3 credits each semester. \$15.

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

Fall Semester

1 M 6:20 Folwell 202, Luckey
T 8:05 St. P. Ext. Center 204, Mousolite
Th 6:20 Folwell 202, Dunkum

Spring Semester

2 M 6:20 Folwell 202, Luckey
T 8:05 St. P. Ext. Center 204, Mousolite
Th 6:20 Folwell 202, Dunkum

3-4 Intermediate Spanish. 3 credits each semester. \$15.

Review, composition, readings from modern authors. Attention to correspondence and commercial practice if desired. Prerequisite: Spanish 1-2 or 2 years of preparatory Spanish.

Fall Semester

3 T 6:20 St. P. Ext. Center 220, Buss
W 6:20 Folwell 202, Floripe

Spring Semester

4 T 6:20 St. P. Ext. Center 220, Buss
W 6:20 Folwell 202, Floripe

5-6 Written and Spoken Spanish. 3 credits each semester. \$15.

Practice in speaking, review grammar and composition. Prerequisite: 3-4.

Fall Semester

5 W 6:20 St. P. Ext. Center 204, Mousolite

Spring Semester

6 W 6:20 St. P. Ext. Center 204, Mousolite

7-8 Latin-American Culture. 3 credits each semester. \$15.

This course offers a panoramic view of Latin-American culture. It attempts to interpret the land, the people, and their history; the political, social, and economic organization; the cultural and literary traditions in such a way as to give the North American a unified picture of the twenty countries of Latin America. Lectures and readings in English; Spanish not necessary. No prerequisite.

Fall Semester

7 Th 6:20 Folwell 201, Cuneo

Spring Semester

8 Th 6:20 Folwell 201, Cuneo

70-71 Latin-American Civilization and Culture. 3 credits each semester. \$15.

Readings from selected authors, past and current. Class is conducted in Spanish. Prerequisite: Spanish 3-4.

Fall Semester

70 Th 6:20 Folwell 213, Irving

Spring Semester

71 Th 6:20 Folwell 213, Irving

SPEECH

1-2†-3 Fundamentals of Speech. 3 credits each semester. \$15 plus \$1 laboratory fee.

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. No prerequisite.

Fall Semester

1 M 8:05 Folwell 308, Fletcher
W 6:20 St. P. Ext. Center 206, Bystrom
2 M 6:20 Folwell 305, Paulson
W 6:20 St. P. Ext. Center 206, Bystrom
3 M 6:20 Folwell 305, Paulson
W 6:20 St. P. Ext. Center 206, Bystrom

Spring Semester

1 M 8:05 Folwell 308, Fletcher
W 6:20 St. P. Ext. Center 206, Bystrom
2 M 6:20 Folwell 305, Paulson
W 6:20 St. P. Ext. Center 206, Bystrom
3 M 6:20 Folwell 305, Paulson
W 6:20 St. P. Ext. Center 206, Bystrom

Beginning Acting (Speech 32). See Theater, page 42.

Advanced Acting (Speech 76). See Theater, page 42.

Efficient Listening. See page 30.

Beginning Practical Speech Making. 3 Extension credits. \$15 plus \$1 laboratory fee.

A beginning course for business and professional people who are desirous of learning to speak extemporaneously so that their ideas may be presented in an organized way and 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 in Advanced Practical Speech Making. Voice recordings will be made. No prerequisite. (Sections limited to 25 each.)

Fall Semester

M 6:20 Folwell 5, Nichols
T 6:20 Folwell 5, Fulton
W 6:20 Folwell 5, Fulton
Th 6:20 St. P. Ext. Center 219, Woods

Spring Semester

M 6:20 Folwell 5, Nichols
T 6:20 Folwell 5, Fulton
W 6:20 Folwell 5, Fulton
Th 6:20 St. P. Ext. Center 219, Woods

† See Information, page 6.

Advanced Practical Speech Making. 3 Extension credits. \$15 plus \$1 laboratory fee.

An advanced course for business and professional people who are desirous of developing skill in extemporaneous speaking dealing with life problems and public questions; individual attention to special problems. Each student speaks before the class each meeting. Voice recordings will be made. Open only to students who have completed Beginning Practical Speech Making, except by special permission of instructor. (Sections limited to 25 each.)

Fall Semester
W 6:20 Folwell 8, Sandquist

Spring Semester
W 6:20 Folwell 8, Sandquist

Efficient Listening. See page 30.

Vocabulary Building I. 1½ Extension credits. \$7.50 plus \$1 materials fee.

A practical course designed to increase students' speaking and reading vocabularies. Mimeographed matter, in lieu of text, issued each meeting. Home study suggested but not required. Not a recitation class. Meets weekly for one hour. No prerequisite.

Fall Semester
T 6:20 St. P. Ext. Center 204, Dreher
T 8:05 Folwell 308, Dreher

Vocabulary Building II. 1½ Extension credits. \$7.50 plus \$1 materials fee.

A more advanced and detailed study of words. Includes composition, exercises, reports, tests; not a recitation class; home study recommended. Meets weekly for one hour. No prerequisite.

Spring Semester
T 6:20 St. P. Ext. Center 204, Dreher
T 8:05 Folwell 113, Dreher

TEXTILES

See Business Classes, page 43.

Textile Weaving. See page 14.

THEATER

Beginning Acting (Technical Approach). 3 credits (see below). \$15 plus \$1 laboratory fee.

This is a course designed to follow the creative work done in Beginning Acting as taught in 1950-51, although that work is not necessarily a prerequisite to the present course. Some attention will be given to all basic techniques including the art of makeup, although the primary emphasis will be upon technique of the body and will include pantomimic dance. Students are eligible for tryout in acting and constructive phases of University Theatre activities. No prerequisite. Qualified students may receive credit in Speech 33. Consult instructor at opening class.

Fall Semester
Th 6:20 Nicholson 3rd Floor, Moulton

Advanced Acting. 3 Extension credits or 3 credits in Speech 78 (see below). \$15 plus \$1 laboratory fee.

A course designed for those who have had some training or experience in acting and wish to improve their skills. Emphasis is upon the study of characterization, various styles of acting, and the principles of stage technique. Exercises and projects in the presentation of scenes from great plays. Qualified students may receive credit in Speech 78; consult instructor at opening class.

Spring Semester
Th 6:20 Nicholson 3rd Floor

Radio Drama. See page 36.

Radio Writing. See page 36.

55-56 Shakespeare. See page 21.

ZOOLOGY

1-2† General Zoology. 5 credits each semester. \$25 plus \$5 laboratory fee.

Structure, physiology, embryology, classification, genetics, and evolution of animals. Equivalent to Zoology 1-2-3 in day class. Three hours each night, including laboratory work. Minimum registration of 20 students required. No prerequisite.

Fall Semester
1 MW 6:30 Zoology 211

Spring Semester
2 MW 6:30 Zoology 211

† See Information, page 6.

BUSINESS CLASSES

ACCOUNTING

Econ. 24, 25, and 26 Principles of Accounting.

The first-year introductory course in accounting. Standard college text and correlated laboratory materials prepared mostly outside the class. Accounting procedures for recording, adjusting and closing books, control accounts with special journals and ledgers, preparation of worksheets and statements; elementary corporate financial accounts with invested capital, bonds, reserves, funds; partnership problems, manufacturing and branch accounting; statement analysis.

Note: The three consecutive courses, Economics 24, 25, and 26 are scheduled on the following three plans:

Semester basis: Regular 3-credit class periods once a week each semester, for students who prefer shorter class sessions and more time for preparation, or who may take two courses in one evening.

Quarter basis: 2½-hour class sessions weekly for those who wish to complete the three units in three quarterly sessions of eleven weeks each in one year.

Combined course: 2½-hour sessions twice a week in spring semester only, for those who wish to complete the course in one term.

Econ. 24-25 Principles of Accounting. 3 credits each semester. \$15.

The first two units of the university course in accounting, on the semester basis. No prerequisite.

Fall Semester			Spring Semester		
24	M 6:20	St. P. Ext. Center 218, Montgomery	25	M 6:20	St. P. Ext. Center 218, Montgomery
	T 6:20	Vincent 301		T 6:20	Vincent 301
	W 6:45	McKnight Bldg. 250		W 6:45	McKnight Bldg. 250

Econ. 26 Principles of Accounting. 3 credits. \$15.

Third unit of the three-term course on semester basis. May be followed by B.A. 65 in spring semester. Prerequisite: Economics 25.

Fall Semester	
T 6:20	St. P. Ext. Center 216
W 6:20	Vincent 301

Econ. 24-25-26 Principles of Accounting. 3 credits each quarter. \$15 each unit.

The first-year university course in accounting, quarter basis. Classes meet for approximately 2½ hours. No prerequisite.

Fall Quarter		Winter Quarter		Spring Quarter		
24	M 6:20-9:00	Vincent 301	25	(same schedule as fall)	26	(same schedule as fall)
	Th 6:20-9:00	St. P. Ext. Center 218, Montgomery				

Econ. 24-25-26 Principles of Accounting (Combined). 9 credits. \$15 each unit.

This course offers Economics 24-25-26 complete in one semester, six weeks for each, two classes per week. Classes meet for 2½ hours. Registration and fees accepted for combined course, or for single units provided Economics 24 has preceded 25 and Economics 25 has preceded Economics 26.

Spring Semester	
MF 6:20	Vincent 309, Lund
MF 6:20	St. P. Ext. Center 216, Creviere

B.A. 65 Analysis of Financial Statements. 3 credits. \$15.

A course in the use of financial statements by creditors, investors and executives. The material is approached from the viewpoint of the reader of statements, and is not concerned with accounting technicalities. Reports of commercial, industrial, public utility and railroad companies are used as basic material for the course. Prerequisite: Economics 23 or 26 or consent of instructor.

Spring Semester	
W 6:20	Vincent 2, Nelson

B.A. 150-151 Intermediate Accounting. 3 credits each semester. \$15.

Second year accounting for students intending to specialize in accounting. Standard text and problems designed to build on principles of the first year course, developing accepted accounting practices in valuation and amortization procedures, determination of periodic income and stockholders' interest. Prerequisite: Economics 23 or 26 or equivalent with consent of instructor.

Fall Semester			Spring Semester		
150	M 6:20	Vincent 2, Heilman	151	M 6:20	Vincent 2, Heilman
	T 6:20	St. P. Ext. Center 218, Guthman		T 6:20	St. P. Ext. Center 218, Guthman
	W 6:20	Vincent 306, Lund		W 6:20	Vincent 306, Lund

B.A. 152-153 Cost Accounting. 3 credits each semester. \$15.

Cost accounting with text, laboratory set and problems, requiring outside preparation, covering job order and process cost procedures and theory. With special permission students may substitute B.A. 152 for B.A. 130 to meet core group requirements. Prerequisite: Economics 23 or equivalent with instructor's consent.

Fall Semester				Spring Semester			
152	T	8:05	St. P. Ext. Center 218, Tuttle	153	T	8:05	St. P. Ext. Center 218, Tuttle
	W	6:20	Vincent 307, Ostlund		W	6:20	Vincent 307, Ostlund

Advanced Cost Accounting A-B†. 3 Extension credits each semester. \$15.

A detailed practical application to business situations of the principles of cost accounting, and the installation of cost systems; burdens and burden centers; *pro forma* journal entries; wage methods; change from job to process cost methods; by-product accounting; forms. Prerequisite: B.A. 152-153, or Cost Accounting I-II.

Fall Semester				Spring Semester			
A	W	6:20	St. P. Ext. Center 214, Tuttle	B	W	6:20	St. P. Ext. Center 214, Tuttle

B.A. 131 Distribution Cost Accounting. 2 credits plus 1 Extension credit. \$15.

The principles and procedures involved in handling cost accounting in retailing, wholesaling, and the distributive divisions of manufacturing enterprises. Prerequisite: B.A. 153 or consent of instructor.

Fall Semester			
T	6:20	Vincent 309, Ostlund	

B.A. 133 Standard Cost Accounting and Distribution Costs. 3 credits. \$15.

Methods of standard costs; meaning of standards; setting of standards for materials, labor and overhead; analysis of and accounting for variations; development and application of standards to distribution as well as to production activities. Prerequisite: B.A. 66 or 130 or B.A. 153 or consent of instructor.

Fall Semester				Spring Semester			
W	8:05	St. P. Ext. Center 214, Tuttle		T	6:20	Vincent 307, Ostlund	

B.A. 118 Auditing Procedure. 3 credits. \$15.

An introduction to auditing procedure with the preparation of a coordinated set of working papers and related statements, from ledgers, journals, original documents. A course prerequisite to B.A. 135, Auditing and Public Accounting. Prerequisite: B.A. 151 or 65 or 139.

Fall Semester			
Th	6:20	Vincent 306, Reighard	

B.A. 135 Auditing and Public Accounting. 3 credits. \$15.

Preparation of audit reports from working papers; development of accepted auditing procedures under S.E.C. and A.I.A. releases; consideration of C.P.A. auditing problems and special case studies. Prerequisite: B.A. 118.

Spring Semester			
Th	6:20	Vincent 306, Reighard	

B.A. 134 Income Tax Accounting. 4 credits plus 2 Extension credits. \$30.

Application of income tax laws to and preparation of both state and federal returns for individuals, partnerships, and corporations. Class meets once a week for three hours and twenty minutes. Prerequisite: B.A. 151 or consent of instructor.

Fall Semester			
M	6:20	Vincent 309, Nelson	
W	6:20	St. P. Ext. Center 216, Daly	

B.A. 136 Controllership Function and Procedures. 3 credits. \$15.

Organization of and the administrative problems of the accounting system operation from a procedural point of view to insure integrity, accuracy, accountability and control in different lines of business activity. Prerequisite: Economics 23 or 26.

Spring Semester			
M	6:20	Vincent 306, Wheeler	

B.A. 154 Budgetary Control. 3 credits. \$15.

The fundamentals of establishing and operating a budget. Budgetary control and the relation to break-even analysis. Prerequisite: B.A. 66 or 130 or 152 or consent of instructor.

Fall Semester			
M	6:20	Vincent 205, Wheeler	

B.A. 159 Advanced Accounting. 3 credits. \$15.

Branch accounting, consolidated statements, estates and trusts, concerns in financial difficulties, and other specialized problems. Prerequisite: B.A. 151.

Spring Semester			
T	8:05	St. P. Ext. Center 216	
W	6:20	Vincent 301	

ADVERTISING

B.A. 188 Advertising. 3 credits. \$15.

Covers two important phases of advertising: the place of advertising in business and advertising procedure. Attention to planning an advertising campaign, including market research, appropriations, choice of media, scheduling, preparation of copy, and layout. Prerequisite: Economics 6-7, Psychology 1-2, 56, and B.A. 77, Marketing.

Spring Semester

T 6:20 Vincent 205, Lewis

The Creation of Advertising. 3 Extension credits. \$15.

A somewhat advanced course in planning, writing, and designing advertisements. Depending upon enrolment, emphasis will be placed on retail or agency-type problems—but both will be covered. Course to be taught by professional writers and artists, and assignments will involve practical problems in advertising creation of all kinds. Prerequisite: Journalism 18 or Advertising Practice or actual advertising experience with consent of instructor.

Spring Semester

W 8:05 Murphy 302, Seehafer and others

18 Principles of Advertising. See Journalism, page 26.

65 Advertising Production Workshop. See Journalism, page 26.

86 Advertising Copy and Layout. See Journalism, page 27.

87 Radio Advertising. See Journalism, page 27.

BUSINESS ENGLISH

1 Business English. 3 Extension credits. \$15.

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 type; application of good grammar and correct forms in all business writing. Repeated spring semester. No prerequisite.

Fall Semester

T 6:20 St. P. Ext. Center 206, Lippert
 T 8:05 St. P. Ext. Center 206, Lippert
 T 8:05 Ford 75, Haga
 W 6:20 Ford 75, Haga

Spring Semester

T 6:20 St. P. Ext. Center 206, Lippert
 W 6:20 Ford 75, Haga

2 Business Correspondence. 3 Extension credits. \$15.

A more advanced class with less emphasis on grammar and mechanics. Practical adaptation of successful letter writing to specialized correspondence under such headings as: executive, personnel, and financial problems. Each student will work out an individual communications project related to his own most imperative business needs. No prerequisite, but Business English or its equivalent is, for practical reasons, strongly recommended.

Spring Semester

T 8:05 St. P. Ext. Center 206, Lippert
 W 8:05 Ford 75, Haga

BUSINESS LAW

B.A. 51-52-53, 56 Business Law. 3 credits each semester. \$15. (51 and either 52 or 53 must be completed before credit for degree or senior certificate is granted.)

Comprehensive course in the fundamental principles of law for the business and professional man. B.A. 51: contracts—formation, operation, transfer, discharge. B.A. 52: business associations—nature, creation and terms of the relation, rights, and liabilities of the parties when doing business through agents, partnerships, and corporations. B.A. 53: law of sales of goods under the Uniform Sales Act and law of commercial paper under the Uniform Negotiable Instruments Law. B.A. 56: 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. Prerequisite: B.A. 51 must precede 52 or 53 unless the consent of the instructor is obtained for a different sequence.

Fall Semester

51 M 8:05 St. P. Ext. Center 206, Moss
 W 6:20 Vincent 4, Ackman
 52 M 6:20 St. P. Ext. Center 214, Moss
 W 8:05 Vincent 4, Ackman
 53 T 6:20 Vincent 113, Thomas

Spring Semester

51 M 6:20 St. P. Ext. Center 206, Moss
 W 8:05 Vincent 4, Ackman
 52 M 8:05 St. P. Ext. Center 206, Moss
 W 6:20 Vincent 4, Ackman
 56 T 8:05 St. P. Ext. Center 216, Leonard
 Th 6:20 Vincent 1, Maloney

Common Legal Problems I. 3 Extension credits. \$15 plus \$1 materials fee.

A course in everyday legal principles for the layman who wishes more intelligently and efficiently to fulfill his place as a citizen; not a "business law" course. Any individual, whether married or single, housewife or businessman, is bound to come up against many legal problems in varied fields during a lifetime. In many cases these problems might never arise or might be considerably eased if the persons involved could anticipate them and know in advance what are the basic rights and liabilities and what steps should be taken to enforce or guard them, whom to consult, etc. This course will examine those everyday transactions which of necessity involve certain fundamental legal aspects: property rentals, leases, purchases and sales, building contracts and liens, mortgages and loans; rights and liabilities of master and servant, husband and wife, agents or partners; liability for accidents, negligence, trespass, etc.; handling of wills, estates, tax returns, etc.; and many similar common operations or relationships.

Fall Semester		Spring Semester	
W 6:20	Ford 20, Thorfinnson	W 6:20	Ford 20, Thorfinnson
W 6:20	St. P. Ext. Center 217, Riley	W 6:20	St. P. Ext. Center 217, Riley

Common Legal Problems II. 3 Extension credits. \$15 plus \$1 materials fee.

A continuation of Common Legal Problems I. This course will examine in greater detail many of the fundamental legal problems considered in the first semester course. Consideration will also be given to economic, business, and social legislation which necessarily affects the individual's legal rights, i.e., benefits under the Social Security Act, Railroad Retirement and Sickness Benefit Acts, Old Age Assistance legislation, Workmen's Compensation Act, etc.; the effects of State and Federal legislation on business management, employees, and the public; wage and price control; the Interstate Commerce Commission; the Federal Communications Commission; the Securities and Exchange Commission; Public Utilities Commissions; Fair Trade legislation, and so forth. Prerequisite: Common Legal Problems I.

Fall Semester		Spring Semester	
W 8:05	Ford 20, Thorfinnson	W 8:05	Ford 20, Thorfinnson
W 8:05	St. P. Ext. Center 217, Riley	W 8:05	St. P. Ext. Center 217, Riley

ECONOMICS AND FINANCE**Econ. 3 Elements of Money and Banking.** 3 credits. \$15.

The nature and functions of money and credit; a study of commercial banking and the Federal Reserve System—their functions in private finance, ordinary governmental finance, and war finance. Machinery designed to control alternate periods of inflation and deflation; other types of financial institutions and security exchanges; changes in form and functions resulting from legislation or revised business practices. No prerequisite.

Fall Semester		Spring Semester	
M 8:05	St. P. Ext. Center 214	Th 8:05	Vincent 113
T 6:20	Vincent 205		

Econ. 5 Elements of Statistics. 3 credits. \$15.

The principles of statistical methods applied to business; collection, tabulation, and interpretation of statistical data; averages, ratios, errors, index numbers, graphs, and charts. No prerequisite.

Fall Semester		Spring Semester	
M 8:05	St. P. Ext. Center 216	M 6:20	St. P. Ext. Center 214
W 6:20	Vincent 113	Th 6:20	Vincent 113

Econ. 6-7 Principles of Economics. 3 credits each semester. \$15.

Fundamental principles underlying the economic activities and national income; 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 prerequisite.

Fall Semester		Spring Semester	
6 M 6:20	Vincent 207	6 T 8:05	Vincent 207
M 8:05	St. P. Ext. Center 217	7 M 6:20	Vincent 205
T 8:05	Vincent 1	M 8:05	St. P. Ext. Center 214
W 6:20	Vincent 6	T 6:20	Vincent 207
Th 8:05	Vincent 207	W 6:20	Vincent 207
7 T 8:05	Vincent 207	Th 8:05	Vincent 207

B.A. 58 Elements of Public Finance. 3 credits. \$15.

Public expenditures, revenues, debts, fiscal policy and financial administration. Special attention is given to tax principles, practices, burdens, and coordination of national, state, and local finance. Prerequisite: Economics 6-7.

Spring Semester	
T 6:20	Vincent 113

Econ. 64 Economics of Money and Banking. 3 credits. \$15.

The problems of a central bank and the theory of the value of money. Includes control of reserves, providing a scientific currency, regulation of credit, fluctuations of the general price level—their causes and possible reduction. Prerequisite: Economics 3 and 6-7.

Fall Semester	
T 6:20	Vincent 2, Smith

Econ. 73 Manpower Economics and Problems. See Industrial Relations, page 48.

B.A. 74 Business Statistics. 3 credits. \$15.

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. Prerequisite: Economics 5, or 14, or equivalent.

Spring Semester

Th 8:05 Vincent 205

Econ. 75 Corporation Finance. 3 credits. \$15.

Incorporation. The various types of corporate securities and their uses. Financial plans for industrial, utility, and other types of corporations. Financial affairs of an established business. General financial problems of the holding company, consolidations, mergers, and reorganizations. Prerequisite: Economics 3 and 6-7.

Spring Semester

T 8:05 Vincent 113, Sutton

Econ. 80-81† Intermediate Economics Analysis. 3 credits each semester. \$15.

A study of some of the more important theoretical problems of economics; competitive and monopoly prices; equilibrium prices and costs; theories of valuation of producers' goods; capital earnings and interest rates; profits. Prerequisite: Economics 6-7.

Fall Semester

80 Th 6:20 Vincent 205, Turnbull

Spring Semester

81 Th 6:20 Vincent 205, Turnbull

Econ. 85 Government Regulation of Business. 3 credits. \$15.

A general course on the economic aspects of legislation affecting the pricing process and the distribution of the national income; origins of limitations on free competition; regulation of public utilities, trusts and combinations, and "unfair competitive practices"; positive assistance to industrial groups. Prerequisite: Economics 7.

Fall Semester

Th 8:05 Vincent 2, Boddy

B.A. 146 Investments. 3 credits. \$15.

A general or "cross cut" survey of the external and internal factors influencing the prices of securities, and of the principles of an investment policy for the individual investor. Emphasis is placed upon objective analysis from source materials of factors explaining price differentiation. Prerequisite: Economics 75 or 155.

Spring Semester

T 6:20 Vincent 4, Sutton

Econ. 149 Business Cycles. 3 credits. \$15.

Analysis of factors involved in business fluctuations. Comparison of theories of the cause of prosperity and depression. Introduction to the statistical data and methods of business forecasting. Prerequisite: Economics 141 or 64 or 142 or consent of instructor.

Spring Semester

W 6:20 Vincent 6, Smith

Fundamentals of Investment Banking I-II. 3 Extension credits each semester. \$15.

Classroom instruction supplemented by special lectures by men of experience in investment banking, commercial banking and other related fields. Course covers nature of various kinds of securities; statistical and investment analysis of securities; vocabulary and practices of the securities business; investment practices of various investor groups. No prerequisite.

Fall Semester

I M 6:20 Vincent 6, Power

Spring Semester

II M 6:20 Vincent 6, Power

INDUSTRIAL ENGINEERING

See Engineering Classes, page 53.

INDUSTRIAL MANAGEMENT

B.A. 89 Production Management. 3 credits. \$15.

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. (Same as Mech. Eng. 171.) Included in core group requirement for all candidates for a degree in business. Repeated spring semester. Prerequisite: Economics 6-7.

Fall Semester

T 6:20 Vincent 4, Mitton

Spring Semester

T 6:20 Vincent 306, Mitton

† See Information, page 6.

B.A. 170C Materials Control and Utilization. 3 credits. \$15.

A course of interest to those engaged in the general field of production. Considered from the point of view of material as a cost of production—what management can do to effect economical utilization of materials; elimination of waste; storage and movement of materials; purchase contract clauses that affect the ultimate delivered cost of materials; relation of material control to production control; factors other than basic market prices that affect material costs. Prerequisite: B.A. 89.

Spring Semester

T 8:05 Vincent 306, Mitton

B.A. 184 Scientific Management in Industry. 3 credits. \$15.

A study of the origin and development of the movement to apply the methods of science to the management of industrial enterprises; the effects upon individual plant management and the influence upon "rationalization" in industrial society. Prerequisite: B.A. 89 or concurrent registration

Fall Semester

T 8:05 Vincent 4, Mitton

INDUSTRIAL RELATIONS**Econ. 73 Manpower Economics and Labor Problems. 3 credits. \$15.**

Employment; hours; wages; extent and stronghold of unionism; open and closed shop; collective bargaining; industrial unrest; government regulation of labor disputes. Special emphasis on the current proposals for industrial recovery and the re-employment of labor. Prerequisite: Economics 6-7.

Fall Semester

T 6:20 St. P. Ext. Center 214, Fox

W 6:20 Vincent 2, Heneman

Econ. 162 Labor Movements. 3 credits. \$15.

Presents an analysis of the development of labor movements in Europe and the United States. It provides an examination of the origins of labor movements, their growth, the problems faced under various sorts of governments, and an analysis of the economic and social consequences of these developments. Prerequisite: Economics 73 or 161.

Spring Semester

T 6:20 Vincent 2, Benewitz

Econ. 164 Labor Legislation: Collective Bargaining. 3 credits. \$15.

Analyzes (1) the interrelationships between the development of labor organizations and the techniques utilized by them in furthering their interests, and the actions and decisions of the executive, legislative, and judicial branches of the government, and (2) the economic and social implications of issues arising in this area. The subject matter covered ranges from an examination of applicable common law origins through the Labor-Management Relations Act of 1947. Prerequisite: Economics 73 or 161.

Spring Semester

M 8:05 Vincent 6, Cheit

B.A. 167 Introduction to Industrial Relations. 3 credits. \$15.

Evaluation of managerial policies and devices for the control of personnel; determination of labor needs; methods of dealing with workers; selective devices; training and safety programs; compensation; collective bargaining; governmental personnel programs. Prerequisite: Economics 73 or 161.

Spring Semester

M 6:20 St. P. Ext. Center 204, Fox

W 6:20 Vincent 113, Heneman

Psy. 122-123† Vocational and Personnel Psychology. See page 35.**Psy. 125-126 Psychology of Individual Differences. See page 35.****Survey of Current Problems in Industrial Relations. 3 Extension credits. \$15.**

Note—The content of this course changes each time it is given and as the course title indicates, deals with current materials. Hence, experienced industrial relations workers may wish to repeat this course at intervals.

A discussion workshop for advanced students concerned with sources of information about modern industrial relations concepts, policies and practices; the nature and operation of labor markets, collective bargaining, labor legislation and social insurance; selection and training, wages and hours, and other related topics. Each session will consist of a short lecture by a specialist in the specific topic under consideration, followed by a conference-type discussion period led by the guest speaker and the instructor. Course open to experienced union officers and business agents, personnel and industrial relations managers, and government officials doing industrial relations work. A limited number of students who cannot meet these requirements, but have successfully completed B.A. 167 (Personnel Administration), may also be admitted. Class will be limited and early registration is recommended. Prerequisite: consent of instructor.

Fall Semester

W 8:05 Vincent 2, Heneman and other members of Industrial Relations Center staff

Elements of Supervision. 3 Extension credits. \$15 plus \$1 materials fee.

A general discussion of the basic principles of foremanship. Survey of the problems of industrial relations and personnel management met with in day-to-day supervision with emphasis on human relations. Practical aspects of such problems as the status of the supervisor, selection, induction and training of employees, merit rating, giving orders, quality and cost control and labor legislation affecting supervisors. Extensive use of the class discussion technique and training films. No prerequisite. Repeated spring semester.

Fall Semester		Spring Semester	
Th 6:20	Vincent 6, Jensen	Th 6:20	Vincent 6
Th 6:20	St. P. Ext. Center 204, Kirchner	Th 6:20	St. P. Ext. Center 204, Kirchner

Advanced Supervision. 3 Extension credits. \$15.

Advanced supervision emphasizes techniques based upon the theory outlined in Elements of Supervision. It includes discussion of research into supervisory methods and practices and their relative success in application. Methods of supervisory training, morale measurement, job evaluation, job analysis, job classification, safety programs, wage and salary administration, labor legislation, principles of organization and communications are among the topics discussed. Extensive use is made of discussion method and case studies. Prerequisite: Elements of Supervision or consent of instructor.

Fall Semester		Spring Semester	
Th 8:05	Vincent 6	W 8:05	Vincent 6
Th 8:05	St. P. Ext. Center 204	W 8:05	St. P. Ext. Center 204

Elements of Union Administration. 3 Extension credits. \$15.

A general discussion of the basic principles of local union administration, as encountered by business agents, shop stewards, and local union officers. Includes discussion of techniques used in union government and administration, collective bargaining and grievance, union-member relations, union-community relations, shop rules, and union leadership. Survey of problems of industrial relations met in day-to-day union administration with emphasis on human relations. No prerequisite.

Fall Semester		Spring Semester	
M 8:05	Vincent 2, Cheit and Leonard	Th 8:05	St. P. Ext. Center 206

Wage and Salary Stabilization Program. 2 Extension credits. \$10.

An analysis of the bases of emergency wage stabilization. War Labor Board and Wage Stabilization Board Practice; wage negotiation and wage increases during stabilization. Ten meetings beginning October 2.

October 2-December 4

T 8:05 Vincent 6, Humphrey

Personnel Methods. 3 Extension credits. \$15.

A detailed analysis and evaluation of a limited number of specific, technical techniques of professional personnel management—such as job evaluation, wage surveys, incentive systems, supervisory training, morale surveys, testing. Prerequisite: B.A. 167 or consent of instructor.

Spring Semester	
M 8:05	St. P. Ext. Center 204, Fox

INSURANCE

Econ. 50 Insurance Principles. 3 credits. \$15.

Deals with the nature and measurement of risk and with the development and uses of personal, property, and liability insurance. Forms of protection; policy contracts; social insurance and government regulation. Special emphasis on property insurance. Prerequisite: Economics 6-7. Repeated spring semester.

Fall Semester		Spring Semester	
T 8:05	Vincent 113, Graves	T 8:05	Vincent 6, Graves

Property and Casualty Insurance Curriculum. In cooperation with the American Institute for Property and Liability Underwriters, Inc.

The University of Minnesota cooperates with the American Institute for Property and Liability Underwriters, Inc. by offering an educational program that provides the basic courses needed by those who wish to take the institute's examinations for the Chartered Property Casualty Underwriter (C.P.C.U.) award. Complete details of this program of training are printed in the institute's annual announcements, copies of which may be obtained from the General Extension Division of the University of Minnesota. Following is an outline of the program, with a list of the appropriate courses offered by the General Extension Division.

Parts I-II Insurance Principles and Practices	See C.P.C.U. course listed below
Part III General Education	Econ. 6-7 Principles of Economics
Economics	Pol.Sci. 1-2 American Government
Government	Econ. 164 Labor Legislation: Collective Bargaining
Social Legislation	Grammar Review or Business English
English	
Part IV Law	B.A. 51-52-53, 56 Business Law (does not include Law of Negligence)
Part V Accounting and Finance	Econ. 24-25-26 Principles of Accounting
Accounting	Econ. 3 Elements of Money and Banking
Finance	B.A. 89 Production Management
Business Organization	

C.P.C.U. Part II. Insurance Principles and Practices, A-B. 3 Extension credits each semester. \$15.

An intensive course in the basic principles of property and casualty insurance, designed as preparation for examination II for the Chartered Property Casualty Underwriter (C.P.C.U.) award offered by the American Institute for Property and Casualty Underwriters, Inc. The course will be conducted by a panel of instructors selected from practicing insurance men, coordinated and supervised by the University School of Business Administration. A course in Part I will be offered in 1952-53. Prerequisite: At least three years' general experience or the equivalent in formal study and acceptance of special registration application; consult any Extension office.

Fall Semester		Spring Semester	
A	M 6:20	Ford 120, Graves, coordinator	B M 6:20 Ford 120, Graves, coordinator

C.P.C.U. Part V. General Education, A-B. 3 Extension credits each semester. \$15.

This course is designed as preparation for examination V for the Chartered Property Casualty Underwriter (C.P.C.U.) award. The subject matter covers Economics, Government and Social Legislation. Prerequisite: A basic collegiate course in both Economics and Government and acceptance of special registration application; consult any Extension office.

Fall Semester		Spring Semester	
A	M 8:05	Ford 120, Reighard	B M 8:05 Ford 120, Reighard

College of Life Underwriters Curriculum. In cooperation with the Minneapolis and St. Paul chapters of the American College of Life Underwriters (C.L.U.).

This year the Extension Division is offering Part C, Law, Trusts and Taxes section of the C.L.U. educational program (see listing below). Many of the regularly listed courses elsewhere in this bulletin may be of assistance to those who are preparing for examination on other parts of the curriculum. Full information on the American College of Life Underwriters study program may be obtained from the annual announcement of the College which is available at Extension offices or through the Minneapolis or St. Paul chapters of the Chartered Life Underwriters.

Minneapolis—M. J. Nolan, 500 First National Soo Line Building.
St. Paul—W. F. Stone, 1300 Pioneer Building.

C.L.U. Part C Law, Trusts and Taxes I-II. 3 Extension credits each semester. \$15.

This course is designed as preparation for the annual C.L.U. examination in Part C, Law, Trusts and Taxes, as conducted by the American College of Life Underwriters. The subject matter will cover such topics as: general commercial law, insurance law and contracts; wills, trusts and estates; taxation and business insurance, etc.

For information concerning the C.L.U. educational program and its requirements see notice above.

Fall Semester		Spring Semester	
I	M 4:00	N.W. Bank Bldg. 690, Fredrikson	II M 4:00 N.W. Bank Bldg. 690, Fredrikson
	M 4:00	St. P. Ext. Center 219, Wheeler	M 4:00 St. P. Ext. Center 219, Wheeler

MARKETING AND MERCHANDISING**Basic Salesmanship.** 3 Extension credits. \$15.

Principles underlying salesmanship—aspects of human relations, buying motives, pre-approach, approach, the interview, meeting objections, voice requirements, closing the sale. Repeated spring semester. No prerequisite.

Fall Semester		Spring Semester	
M	6:20	Ford 20, Stearns	M 6:20 Ford 20, Stearns
Th	6:20	St. P. Ext. Center 206, Stearns	

Advanced Salesmanship. 3 Extension credits. \$15.

Self-management, organizing and planning territorial work, sales routine and office correspondence, finding prospects and getting the interview, individual sales demonstrations, development of potential in the territory, use of advertising. Limited to 35. Prerequisite: Basic Salesmanship or consent of instructor.

Spring Semester	
Th	6:20 Ford 30, Stearns

B.A. 113 Sales Management. 3 credits. \$15.

Organization and direction of sales methods and men from the sales manager's point of view; determination of selling policy; product and market research; sales planning and research; selection of distribution methods; sales campaigns and quotas; incentives and compensation for salesmen; training in salesmanship; supervision and control. Case studies and discussions. Prerequisite: B.A. 77.

Fall Semester	
T	6:20 Vincent 207, Lewis

B.A. 114 Retail Store Management. 3 credits. \$15.

Organization; location, layout, and equipment; buying and sales budgets and sales planning; sales promotion; interior and window display; stock and expense control; finance and general policy; credits and collections; personnel; store operation and services. Case studies, problems, and discussions. Prerequisite: B.A. 77.

Spring Semester

T 6:20 Vincent 1, Canoyer

B.A. 76 Credits and Collections. 3 credits. \$15.

Study of the nature and types of credit and of credit instruments and agencies; qualifications and work of the credit manager; valuation and use of financial statements and credit reports; collection methods and correspondence; bankruptcy and adjustments; credit limits and control. Prerequisite: B.A. 77.

Spring Semester

Th 6:20 Vincent 2

B.A. 77 Survey in Marketing. 3 credits. \$15.

Survey course including descriptive analysis of (1) marketing institutions and their control; (2) market areas; (3) marketing costs; (4) the operation of supply and demand in marketing. Prerequisite: Economics 6-7.

Fall Semester

W 6:20 Vincent 205

Purchasing Principles and Practices I. 3 Extension credits. \$15 plus \$2 materials fee.

Practical purchasing course based on an outline prepared by the Educational Committee of the National Association of Purchasing Agents, and sponsored jointly by the Twin City Association of Purchasing Agents and the University Extension Division. The course includes such topics as: organization, procedure and forms, departmental layout, related functions and problems for purchasing effectiveness. One section is devoted to purchasing decisions such as selecting sources of supply, buying the right quantity and the right quality at the right price, forward buying and speculation, make or buy, and so forth. Each session consists of a lecture by various practicing experts, active purchasing agents from the ranks of the T.C.A.P.A. The lecture is followed by an informal class discussion of the topic and the assigned text material. The course is open to all purchasing personnel, others with the consent of the instructor.

Fall Semester

T 6:20 Ford 155, Peterson, coordinator

G.C. 49A-B-C Retailing and Selling. 5 credits each quarter (classwork, 3 credits; work experience, 2 credits). \$15 plus \$1 materials fee.

Open to full-time store employees who can arrange to attend Monday morning lectures. Instruction in the field of retailing with salesmanship receiving the greatest emphasis. Other phases of merchandising covered will enable one to perform with greater understanding at various capacities in a retail business. The student may follow specific interests through directed studies. Assigned laboratory meetings include demonstrations, reports, group discussions, and observation trips into a variety of distributive businesses. Speakers from local stores, related businesses, and consumer groups provide current information and business contacts of importance. The three units should be taken in sequence but registration in any single unit may be approved by instructor. Prerequisite for all units: permission of instructor.

49A—Salesmanship; personnel policies; store system; consumer credit; stock control; distributive vocations.

49B—Historical background of retailing; types of retail outlets; store organization; non-selling activities in merchandising.

49C—Selling through promotion; display, advertising, store services; trends in retailing; merchandise research, labeling, standardization; consumer education; coordination of retail store activities.

Fall Quarter

A Lect. M 9:00-10:00 a.m. Nicholson 122, B (same schedule as fall quarter)

Determan

Winter Quarter

Lab. T 6:30-10:00 p.m. Nicholson 122, C (same schedule as fall quarter)

Spring Quarter

Determan

B.A. 188 Advertising. See page 45.

For other advertising courses see pages 26 and 45.

REAL ESTATE

The University of Minnesota cooperates with the National Association of Real Estate Boards and with the Real Estate Boards of St. Paul and Minneapolis in a program of educational training leading toward competence in the professional aspects of real estate practice. Instructing staff for each course will be made up of a number of practicing realtors

in the Twin Cities. Coordinator for the Real Estate Boards: Bernard G. Rice, 612 National Building, Minneapolis.

Fundamentals of Real Estate Practice. 3 Extension credits. \$15.

Economic functions of the real estate business; fundamental practices of the real estate office and other realtors; real estate valuations; methods of appraising; ethics of real estate practice. A business course in real estate. Prerequisite: consult instructor.

Fall Semester

M 6:20 Vincent 4, Rice, coordinator

Real Estate Sales Brokerage. 3 Extension credits. \$15.

A study of the basic principles and practices involved in the conduct of real estate sales from beginning to end: evaluation, listing, advertising, contracts and leases, financing and taxes, property showing, selling techniques, code of ethics. No prerequisite.

Fall Semester

W 6:20 Vincent 1, Rice, coordinator

Real Estate Appraisal. 3 Extension credits. \$15.

Detailed consideration of principles and practices involved in appraising various types of real property for various purposes. Factors determining valuations; making and reporting appraisals. Appraisal procedures in various legal actions. Prerequisite: Fundamentals course.

Spring Semester

M 6:20 Vincent 113, Newcombe, coordinator

Real Estate Law (B.A. 56 Business Law). See Business Law, page 45.

Planning Your Modern Home. See page 25.

Building Material Estimating. See page 56.

TEXTILES

Textiles. 3 General College or Extension credits. \$15 plus \$2 materials fee.

A class for consumers and for those making or selling clothing and home furnishings. Woven and knitted fabrics of cotton, linen, wool, silk, rayon, and the new fibers; manufacturing and finishing processes; qualities, tests, uses, maintenance; explanation of technical terms and of characteristics determining comparative values; application to men's, women's, and children's apparel as well as to household items such as draperies, rugs, upholstery fabrics, blankets, linens. The content of the course is somewhat flexible depending upon the needs and interests of the students enrolled. Repeated spring semester. No prerequisite.

Fall Semester

W 7:00 Ford 15, Carlson

Spring Semester

W 7:00 Ford 15, Carlson

TRAFFIC AND TRANSPORTATION

B.A. 71-174 Transportation: Services and Charges. 3 credits each semester. \$15.

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 174. Prerequisite: Economics 6-7.

Fall Semester

71 M 6:20 Vincent 1, Nightingale

Spring Semester

174 M 6:20 Vincent 1, Nightingale

B.A. 180-181-I Senior Topics: Transportation. 3 credits each semester. \$15.

Advanced study of tariffs and tariff construction, of rate structures, and of auxiliary services, including problems thereon. Analysis of important current cases and decisions affecting shippers and carriers. Prerequisite: B.A. 71-174.

Fall Semester

180-I M 8:05 Vincent 1, Nightingale

Spring Semester

181-I M 8:05 Vincent 1, Nightingale

Advanced Traffic and Transportation I-II. 3 Extension credits each semester. \$15.

Advanced study of state and federal regulatory laws and U. S. Supreme Court cases governing rail and highway transportation. Attention to practice and procedure before rate and classification committees, state commissions, and the Interstate Commerce Commission. Preparation of informal, formal, and investigation and suspension cases before regulatory commissions. Prerequisite: B.A. 71-174 and B.A. 180-I, or equivalent.

Fall Semester

I T 6:20 Vincent 6, Nightingale

Spring Semester

II T 6:20 Vincent 6, Nightingale

ENGINEERING CLASSES

GRADUATE EXTENSION PROGRAM IN ENGINEERING

The Institute of Technology, the Graduate School, and the General Extension Division, in cooperation with a group of industrial firms in the Twin Cities area, have inaugurated a program of evening classes designed to satisfy the major portion of the master of science degree requirements in the engineering field.

The Extension course offerings have been chosen from the group of basic scientific subjects upon which advanced study in engineering fields rests. Under degree Plan A, i.e., with thesis, an entire minor of nine credits in mathematics, and varying portions of the major in eight other fields may be completed through Extension work. The balance of the classes needed for the major remain to be taken over a period approximating one full time quarter of day classes in length. Thesis work will be done in the usual manner under the supervision of the departmental adviser.

Only those students duly admitted to the Graduate School will be allowed to enroll in the classes specified for the advanced degree. Those to be offered in 1951-52 are:

- M.&M. 152** Advanced Calculus IV (see page 59).
- M.&M. 153** Advanced Calculus V (see page 59.)
- Ph. 103A** Introduction to Theoretical Physics (see page 33).
- M.E. 134** Thermodynamics of Fluid Flow (see page 59).

For further information about this special course, please contact the Office of the Assistant Dean, General Extension Division, Lincoln 8791 or Midway 3965.

AERONAUTICAL ENGINEERING

Commercial Pilots' Ground School

The University Extension Division operates a Commercial Pilots' Ground School on a short course basis, designed to give prospective commercial air pilots thorough instruction in aerial navigation, meteorology, flight theory, aircraft structures, power plants, civil air regulations, aircraft instruments, radio aids and related subjects. The primary objective of the course is to prepare pilots for the C.A.A. written examination for the commercial pilot rating, but the course also includes considerable preparation for the flight-instructor and instrument-rating examinations.

In each full course there are five "terms." Each term lasts five weeks, the class meeting on Tuesday and Thursday evenings, from 7:30 p.m. to 10:00 p.m., in Room 317 of the new Aeronautical Engineering Building on the Minneapolis Campus of the University. Instructor: Sam R. Hamilton.

- Term I:** Civil Air Regulations, Radio Aids and Instruments.
Dates: September 25, 1951 through October 25, 1951.
- Term II:** Navigation and the Use of Computers.
Dates: October 30, 1951 through November 29, 1951.
- Term III:** Meteorology.
Dates: December 4, 1951 through January 3, 1952.
- Term IV:** Flight Theory.
Dates: January 8, 1952 through February 7, 1952.
- Term V:** Engines and Aircraft.
Dates: February 12, 1952 through March 15, 1952.

Another series will be run following that listed above if enrolment is sufficient; consult any Extension Division office.

A student may enter the course at the beginning of any term, and may enroll for only one term or for any combination of terms, according to his needs. The fee is \$14.40 per term, making a total of \$72 if all five terms are taken. The total cost of textbooks and materials for all five terms is approximately \$10.

Registration may be made through any of the General Extension Division offices, or through the instructor. For more detailed information call Mr. Hamilton at DE 2559.

Private Pilots' Ground School

This course is for student pilots who are seeking a pilot certificate with a private-pilot rating. The student enrolls in the same classes with prospective commercial pilots (see description of Commercial Pilots' Ground School, above), but attends only the first three meetings (7½ hours) of each term, plus approximately one-half hour for a term examination. The student thus receives a total of 40 hours of instruction.

A student may enter the course at the beginning of any term, and may enroll for only one term or for any combination of terms, according to his needs. The fee for the 8-hour term is \$5, making a total of \$25 if all five terms are taken. The total cost of textbooks and computer for all five terms is approximately \$10.

Registration may be made through any of the General Extension Division offices, or through the instructor. For more detailed information call Mr. Hamilton at DE 2559.

CIVIL ENGINEERING

Plain Concrete. 3 Extension credits. \$15.

Concrete materials and concrete mixtures. The course includes a study of concrete aggregate and cements, the design of concrete mixtures, the computation of batch weights, batch volumes, and concrete costs, and a study of air-entrained concrete with methods of measuring air in concrete. Laboratory experiments in concrete mixtures will be included with the class participating as a group. Prerequisite: a knowledge of elementary algebra and elementary physics is desirable.

Fall Semester

Th 6:20 Experimental Engineering 110,
Thomas

Engineering Properties of Soils. 3 Extension credits. \$15.

A course intended for engineers and students who wish to become familiar with the basic principles of soil behavior, the terminology, the types of tests, and the application to practical problems. Origin and development of soils; their physical characteristics; and procedure of tests for their identification and suitability for use. Soil survey methods; field density tests; design of graded mixtures, soil stabilization, and theory of flexible base design. Prerequisite: a knowledge of elementary algebra is desirable.

Spring Semester

W 6:20 Experimental Engineering 110,
Kersten

Surveying I. 3 Extension credits. \$25.

Lectures and field problems in the use of engineer's steel tape, transit and level, adjustment of instruments, computation and platting of field notes, determination of areas of tracts and computation of earthwork volumes. Prerequisite: trigonometry. The class meets 4 hours one night a week in drafting room.

Fall Semester

W 6:20 Main Engineering 217, Fant

Surveying II. 3 Extension credits. \$25.

Lectures and field problems in simple horizontal curves and vertical curves, setting slope stakes for earthwork, topographic mapping by transit and stadia surveys and determination of azimuth by solar observations. Prerequisite: Surveying I. The class meets 4 hours one night a week in drafting room.

Spring Semester

W 6:20 Main Engineering 217, Klingel

Highways and Pavements I. 3 Extension credits. \$15.

An elementary course relating to economics, planning, design, construction, and maintenance of highways and pavements. Textbook assignments, lectures, and laboratory work. Prerequisite: a knowledge of elementary algebra is desirable.

Fall Semester

T 6:20 Experimental Engineering 110,
Kersten

Highways and Pavements II. 3 Extension credits. \$15.

A continuation of course I. Textbook assignments, lectures, and laboratory work. Emphasis on bituminous materials and mixtures. Prerequisite: Highways and Pavements I.

Spring Semester

T 6:20 Experimental Engineering 110,
Thomas

Industrial Statistics I-II. See Mathematics and Mechanics, page 59.

DRAWING AND DESCRIPTIVE GEOMETRY

1 Engineering Drawing. 3 credits. \$15.

Elements of drafting, geometry, sketching, lettering, dimensioning, conventions, working drawings, tracing. Repeated spring semester. No prerequisite.

Fall Semester

W 7:30 Main Engineering 101, Potter
W 7:30 St. P. Ext. Center 218, Springer
Th 7:30 Main Engineering 201, Bullen

Spring Semester

W 7:30 Main Engineering 101, Potter
W 7:30 St. P. Ext. Center 218, Springer
Th 7:30 Main Engineering 201, Bullen

2 Engineering Drawing. 3 credits. \$15.

Detail drawings, auxiliary views, sectional views, assembly drawings, tracing. Repeated spring semester. Prerequisite: Drawing 1 or consent of instructor.

Fall Semester

W 7:30 Main Engineering 101, Potter
W 7:30 St. P. Ext. Center 218, Springer
Th 7:30 Main Engineering 201, Bullen

Spring Semester

W 7:30 Main Engineering 101, Potter
W 7:30 St. P. Ext. Center 218, Springer
Th 7:30 Main Engineering 201, Bullen

3 Descriptive Geometry. 3 credits. \$15.

Elementary course in the methods of representation, correlated in part with analytical geometry. Graphical and algebraic solutions. Lectures, demonstrations, and drafting. Prerequisite: Drawing 2, Mathematics and Mechanics 11.

Fall Semester

W 7:00 Main Engineering 201, Quaid

20 Advanced Mechanical Drawing. 2 credits. \$10.

Working drawings, gearing, cams, developments, multiple auxiliary views, special projections. Prerequisite: Drawing 1.

Fall Semester

W 7:30 Main Engineering 201, Quaid

Spring Semester

W 7:30 St. P. Ext. Center 218, Springer

38 Reading Drawings. 2 credits. \$10.

Completion of view and section problems, translation exercises, reading problems from commercial drawings. Bills of material, calculation of volumes and weights from drawings. Prerequisite: Drawing 1 or equivalent experience.

Fall Semester

W 7:30 Main Engineering 101, Potter

Spring Semester

W 7:30 Main Engineering 101, Potter

52 Alignment Charts. 3 credits. \$15.

Design and construction of alignment charts for solving equations containing three or more variables using both uniform and functional straight line scales. Such charts are particularly useful in Engineering and other fields where problems of a recurrent nature occur. Prerequisite: Drawing 2, Mathematics and Mechanics 12, or permission of instructor.

Fall Semester

M 7:00 Main Engineering 201, Eggers

55 Production Illustration I-II. 3 Extension credits or 2 Institute of Technology credits (see below). \$15.

Pictorial drawing as used in industry. Detail and assembly drawing in pictorial form by the use of isometric, oblique, axonometric, and prospective projection. Students may register for either I or II in either semester Two university credits in Drawing and Descriptive Geometry 55 may be granted for completion of I, consult instructor.

Fall Semester

W 7:30 TSF 203, Doseff

Spring Semester

W 7:30 TSF 203, Doseff

118 Short Course in Curve Fitting. 3 credits. \$15.

The fitting of equations to experimental data and the determination of the constants involved by various graphical and algebraic methods including the method of "Least Squares." A practical course for engineers, scientists, and all others who deal with tests and the evaluation of the results obtained from tests. Prerequisite: Drawing 2, Mathematics and Mechanics 25, or permission of instructor.

Spring Semester

M 7:00 Main Engineering 201, Eggers

Industrial Design I-II. 3 Extension credits. \$15 plus \$2 materials fee.

This course takes up the fundamental principles of practical design, as applied to plastics, leather and other materials used in the commercial field. It deals mostly with three-dimensional designs by carving or by modeling in plasticine, although it is preceded by study of two-dimensional design through drawing. No prerequisite. Students may register for either I or II in either semester, consult instructor.

Fall Semester

W 7:30 TSF 203, Doseff

Spring Semester

W 7:30 TSF 203, Doseff

Architectural Drafting I-II-III-IV. 3 Extension credits each semester. \$15.

A basic course for those needing training for work in architecture. In general the main objectives for each unit will be: I, Drafting techniques; II, Construction details, house plans; III, Pictorial presentation, perspective; IV, Calculations for beams, etc. Students may register for any unit in any semester, with consent of instructor.

Fall Semester

T 7:00 Main Engineering 201, Smalley
Th 7:00 St. P. Mechanic Arts 101, Smalley

Spring Semester

T 7:00 Main Engineering 201, Smalley
Th 7:00 St. P. Mechanic Arts 101, Smalley

ELECTRICAL ENGINEERING**Elements of Electric Circuits I-II. 5 Extension credits each semester. \$25.**

Fundamental laws of direct-current circuits, the magnetic field and magnetic properties of iron and steel, induced and generated electromotive forces, electric fields, storage batteries. Fundamental laws of AC circuits, complex representation of AC quantities, series and parallel AC circuits, polyphase AC circuits, power measurements in AC circuits. No prerequisite.

Fall Semester

I TTh 7:00 Electrical Engineering 237,
Cartwright

Spring Semester

II TTh 7:00 Electrical Engineering 237,
Cartwright

Elements of Electronics I-II. 5 Extension credits each semester. \$25.

Electronic emission, conduction, through vacuums and gases; characteristics of vacuum tubes, of gas and vapor tubes, and of mercury pool tubes; amplifier circuits, trigger circuits, oscilloscopes, and control circuits; application of electronic devices to industry; electronic power devices. Prerequisite: 1-2 or equivalent in experience.

Fall Semester
I TTh 7:00 Electrical Engineering 138

Spring Semester
II TTh 7:00 Electrical Engineering 138

Elements of Electric Machinery I-II. 5 Extension credits each semester. \$25.

Theory of direct-current and alternating-current machinery. Study of operating characteristics. Elementary control equipment and maintenance. Prerequisite: Elements of Electric Circuits 1-2 or equivalent.

Fall Semester
I TTh 7:00 Electrical Engineering 321

Spring Semester
II TTh 7:00 Electrical Engineering 321

GENERAL ENGINEERING**Use of Engineer's Slide Rule.** 1½ Extension credits. \$7.50.

Theory and computation practice necessary for those who wish to use the slide rule in ordinary office computations. Drills on fundamental processes. No prerequisite.

Fall Semester
Th 7:00 Main Engineering 217, Klingel

Building Material Estimating. 3 Extension credits. \$15.

Training in reading detailed blueprints and estimating quantities of materials or cubic yardage in excavations; measurements, picking off blueprints, estimating and figuring total amounts of concrete, brick, timber, and all kinds of steel buildings. This course is intended for the beginner who has no training or experience in reading blueprints or in estimating. Ability to use a slide rule is helpful but not necessary. No prerequisite.

Fall Semester
Th 8:05 Main Engineering 217, Klingel

INDUSTRIAL ENGINEERING**Production Planning and Control.** 3 Extension credits. \$15.

Modern methods for effectively coordinating manpower, materials and equipment with sales are presented. Principles and applications of systems for routing, scheduling, inventory control and determination of economic lot sizes are discussed with regard to specific industries. Students are invited to bring topics for discussion. No prerequisite.

Fall Semester
T 6:20 Mech. Engineering 106, Block

Work Simplification (Motion Study). 3 Extension credits. \$15 plus \$1 laboratory fee.

Men and women in all fields can apply the common sense principles of work simplification to eliminate unnecessary effort and waste motion. Lectures in the use of process charts, operation charts and micromotion study are followed by practice on laboratory problems. Class limited to 25 students accepted in order of registration. No prerequisite.

Fall Semester
W 7:00 Mech. Engineering 106, Block

Work Measurement and Production Standards (Time Study). 3 Extension credits. \$15 plus \$1 laboratory fee.

Measures of productivity for wage incentives, accounting, planning and labor relations are discussed in a series of lectures on principles and practice in time study, motion-time analysis, job standardization and maintenance of production standards. Laboratory periods are provided. Repeated spring semester. No prerequisite.

Fall Semester
M 7:00 Mech. Engineering 106, Imhoff

Spring Semester
M 7:00 Mech. Engineering 106, Imhoff

Industrial Plant Layout. 4½ Extension credits. \$22.50 plus \$2 laboratory fee.

Lectures on the application of industrial engineering principles in simplifying and improving the layout of manufacturing plants, shops, and warehouses and in planning new layouts. Laboratory studies include the use of flow charts, the determination of equipment and space requirements, and the use of templates and scale models in planning new layouts. Students are invited to bring their own problems for laboratory analysis. Class limited to 25 students accepted in order of registration. Class meets for 2½ hours. Prerequisite: Work Simplification, concurrent registration or consent of instructor.

Spring Semester
T 7:00 Mech. Engineering 106, Block

Elements of Quality Control. 3 Extension credits. \$15.

Determination of quality requirements and their relation to manufacturing costs. Establishment of quality control standards; inspection procedures and organization. Use of statistical sampling techniques and control charts for more effective inspection and reduction of costs. For those engaged in quality control and others such as production supervisors, plant managers, and design engineers who are concerned with quality problems. Prerequisite: consent of instructor.

Fall Semester

Th 7:00 Mech. Engineering 106, Block

Industrial Safety and Hygiene. 3 Extension credits. \$15.

Major industrial hazards are reviewed and preventive measures are discussed. Safe practices in relation to production equipment, work procedures, storage and handling of materials, and the layout of industrial plants are studied. Consideration is given to the organization and administration of effective industrial safety and hygiene programs. Course is intended for production supervisors and engineers as well as those actively engaged in industrial safety work. Prerequisite: consult instructor.

Spring Semester

Th 6:20 Mech. Engineering 106, Kavanaugh

MATHEMATICS AND MECHANICS**Basic Mathematics.** 4½ Extension credits. \$22.50.

A practical course for shop men in industry or machine work, and for those who need an elementary background in mathematics. The work includes arithmetic through fractions, decimals, percentage; elementary geometry involving areas of plane figures, proportion, volumes and weights; elementary algebra; elementary trigonometry and logarithms. The course is also valuable as a refresher in elementary secondary mathematics. Class meets for two sessions a week for twelve weeks. Repeated spring semester. Prerequisite: grade school arithmetic.

October 1-December 20

MTh 6:20 Main Engineering 205, Laws

February 11-May 1

MTh 6:20 Main Engineering 205, Laws

Review of Collegiate Mathematics I-II. 5 Extension credits each semester. \$25.

These courses are not designed for *beginners* in any of the subject areas indicated but are to be considered as *refresher* courses for those who already have an adequate foundation in the prerequisite courses or their equivalent. They are especially designed for persons who may wish to apply mathematics to engineering and related subjects.

I: Equations, partial fractions, indices and surds, logarithms, trigonometry with applications—series (progressions, binomial theorem, exponential series, hyperbolic functions, logarithmic series). Plane analytical geometry, including conic sections, properties of conics, solid analytical geometry, the determination of empirical laws, differentiation, applications to kinematics, maximum and minimum points, points of inflection, applications to beam problems, approximations, partial differentiation, introduction to integration. Prerequisite: Analytic Geometry or consent of instructor.

II: Integration, work done by the expansion of a gas, multiple integrals, volumes of solids by integration, centers of mass, center of pressure, moment of inertia, deflection of beams, various methods of integration. Integration applied to dynamical problems, simple harmonic motion, mean values, polar coordinates, curvature and envelopes, complex numbers, Taylor's and Maclaurin's theorems, finite differences, harmonic analysis, use of differentials with simple applications. Prerequisite: integral calculus or consent of instructor.

Fall Semester

I Th 7:00 Main Engineering 203, Wilcox

Spring Semester

II Th 7:00 Main Engineering 203, Wilcox

Elementary Algebra I-II.† Credit toward entrance. \$15.

Elements of algebra to quadratic equations. No prerequisite.

Fall Semester

I Th 8:05 Main Engineering 205, Laws

Spring Semester

II Th 8:05 Main Engineering 205, Laws

Plane Geometry I-II Combined. Credit: one entrance unit. \$30.

Elements of plane geometry, equivalent to one year of high school geometry; designed especially for those who wish to clear up their University of Minnesota entrance requirements. Two sessions a week.

Fall Semester

MW 6:20 Main Engineering 203, Schuck

Solid Geometry. Credit toward entrance. \$15.

Standard theorems and exercises; practice in special proofs and original exercises. Extra sessions arranged during fall quarter in order to complete a full course in a shorter period. Repeated spring semester. Prerequisite: plane geometry.

Fall Quarter

M 8:05 Main Engineering 203, Schuck

Spring Semester

M 6:20 Main Engineering 203, Schuck

† See Information, page 6.

9 Higher Algebra. 5 credits. \$25.

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 in Institute of Technology. Repeated spring semester. Prerequisite: elementary algebra.

Fall Semester
M 7:00 Main Engineering 106
M 7:00 St. P. Ext. Center 204, Scott

Spring Semester
Th 7:00 Main Engineering 227, Braden

11 College Algebra. 5 credits. \$25.

A review of fundamental operations, factoring, fractions, linear simultaneous equations including solution by determinants, exponents and radicals, complex numbers, and quadratic equations. Ratio, proportion, variation, binomial theorem, progressions, theory of equations and numerical solution of equations of higher degree, partial fractions and infinite series. Repeated spring semester. Prerequisite: higher algebra.

Fall Semester
M 7:00 Main Engineering 215, Braden
Th 7:00 Main Engineering 227

Spring Semester
M 7:00 Main Engineering 206
M 7:00 St. P. Ext. Center 217, Scott

12 Trigonometry. 5 credits. \$25.

Logarithms, trigonometric functions, plane right triangles, fundamental relations between functions, various formulas, identities and equations, graphical representation, inverse functions, oblique triangles, de Moivre's theorem. Introduction to spherical trigonometry and study of the right spherical triangle. Repeated spring semester. Prerequisite: College Algebra 11 or equivalent.

Fall Semester
M 7:00 Main Engineering 227, Fischer
W 7:00 Main Engineering 205
Th 7:00 St. P. Ext. Center 214, Polansky

Spring Semester
Th 7:00 Main Engineering 206

13 Analytic Geometry. 5 credits. \$25.

Rectangular coordinate systems in a plane, locus and equation, study of the straight line and its equations, the conic sections, transformation of coordinates, polar coordinates, higher plane curves and various other topics in plane analytic geometry. Introduction to solid analytic geometry. Prerequisite: College Algebra 11 and Trigonometry 12 or equivalent.

Fall Semester
T 7:00 Main Engineering 203

Spring Semester
M 7:00 Main Engineering 215, Fischer
Th 7:00 St. P. Ext. Center 214, Polansky

24 Differential Calculus. 5 credits. \$25.

Functions and limits, the derivative. Applications of the derivative to problems in rates, maxima and minima, inflections, curve tracing. Differentials, approximation with differentials, polar coordinates, parametric equations, curvature, indeterminate forms, partial differentiation, infinite series. Prerequisite: Analytic Geometry 13 or equivalent.

Fall Semester
T 7:00 Main Engineering 227, Fischer

Spring Semester
T 7:00 Main Engineering 203, Wilcox

25 Integral Calculus. 5 credits. \$25.

The integration of standard elementary forms, integration by various devices, the evaluation of constant of integration, the definite integral, areas, volumes, length of curve, area of surfaces, centroids, moments of inertia, fluid pressures, multiple integration with applications, infinite series and the expansion of functions. Prerequisite: Differential Calculus 24 or equivalent.

Fall Semester
T 7:00 Main Engineering 215, Wilcox

Spring Semester
T 7:00 Main Engineering 215, Fischer

26 Technical Mechanics—Statics. 5 credits. \$25.

The composition and resolution of force systems in a plane and in space; conditions for equilibrium of forces; applications to rigid bodies and structures; friction; centroids and center of gravity; moment of inertia. Prerequisite: Integral Calculus 25 or equivalent.

Fall Semester
Th 7:00 Main Engineering 215, Fischer

80 Elementary Differential Equations. 3 credits. \$15.

A first course in ordinary differential equations. Equations of the first order and various degrees, singular solutions. Equations of higher order with particular attention to linear equations. Total differential equations and systems of equations; integration in series. Prerequisite: Integral Calculus 25 or equivalent.

Spring Semester
W 6:20 Main Engineering 215, Fischer

127 Technical Mechanics—Dynamics. 5 credits. \$25.

The kinematics and dynamics of particles and rigid bodies. Translation; rotation; plane motion. The application of work-energy equations. Impulse and momentum; mechanical vibrations. Prerequisite: statics.

Spring Semester
Th 7:00 Main Engineering 215, Fischer

152 Advanced Calculus IV. 3 credits. \$30.

Special topics in advanced calculus. Prerequisite: Mathematics and Mechanics 150, Advanced Calculus III, and admission to the Graduate School.

Fall Semester

T 7:00 Main Engineering 205, Munro

153 Advanced Calculus V. 3 credits. \$30.

Special topics in advanced calculus. Prerequisite: Mathematics and Mechanics 152, Advanced Calculus IV, and admission to the Graduate School.

Spring Semester

T 7:00 Main Engineering 205, Munro

Basic Industrial Statistics I. 5 Extension credits. \$25.

Principles of statistical methods applied to engineering and industrial problems; collection and interpretation of data, averages and measures of variation, charts and graphs, introduction to probability and sampling theory. The above concepts in statistics form the basis for Industrial Quality Control. Class meets for a period of 3 hours each week. Prerequisite: higher algebra or equivalent with consent of instructor.

Fall Semester

W 7:00 Main Engineering 104, McElrath

Basic Industrial Statistics II. 5 Extension credits. \$25.

A continuation of Basic Industrial Statistics I with accent on industrial applications covering: small sampling tests, elements of curve fitting, some aspects of tolerances, introduction to experimental design. Class meets for a period of 3 hours each week. Prerequisite: Basic Industrial Statistics I; or Economics 5, Elements of Statistics; or B.A. 74, Business Statistics; or equivalent with consent of instructor.

Spring Semester

W 7:00 Main Engineering 104, McElrath

Advanced Industrial Statistics I. 5 Extension credits. \$25.

Single, double, multiple sampling plans including discussion on MIL-STD-105A; also an introduction to applications of sequential analysis of data and sequential sampling. Prerequisite: Basic Industrial Statistics I; or Economics 5, Elements of Statistics; or B.A. 74, Business Statistics; or equivalent. Consult instructor.

Fall Semester

M 7:00 Main Engineering 104, McElrath

Advanced Industrial Statistics II. 5 Extension credits. \$25.

An introduction to distribution-free methods of analyzing data including the rank test, sign test, theory of runs; L_0 and L_1 tests; analysis of variance; components of variance; current topics in industrial statistics. Prerequisite: Basic Industrial Statistics I; or Economics 5, Elements of Statistics; or B.A. 74, Business Statistics; or equivalent. Consult instructor.

Spring Semester

M 7:00 Main Engineering 104, McElrath

MECHANICAL ENGINEERING**134 Thermodynamics of Fluid Flow.** 3 credits. \$30.

The fundamental thermodynamic procedures for the energy analysis of the flow of viscous and compressible fluids. Applications to flow systems such as ducts, diffusors, nozzles, ejectors, orifice plates, combustion chambers, heat exchangers, etc. Compressible flow phenomena occurring in mechanical engineering equipment. Flow of gases with suspended particles. Prerequisite: M.E. 132, Thermodynamics; or Physics 73, Intermediate Thermodynamics; and admission to Graduate School.

Spring Semester

Th 7:00 Mech. Engineering 202, Hall

Use of Mechanical Engineering Handbooks I-II. 3 Extension credits each semester. \$15.

The purpose of this course is to train and acquaint those engaged in industrial work with the technical information readily available in the various mechanical engineering handbooks. Special emphasis is given to the application of handbook data and information to the solution of a wide variety of practical problems. The course includes a review of the various current mechanical handbooks and classification of these as to type of technical data. Typical problems involve standard specifications, design data, selection of mechanical equipment and other general mechanical subjects. It is an excellent refresher course for engineers and a practical basic course for others in the industrial field. Part II is a continuation of Part I in which more emphasis is given to the solution of comprehensive problems utilizing handbook information alone and the many shortcuts in problem solution possible through the efficient use of handbook data are stressed. Twelve 3-hour meetings. No prerequisite.

Fall Quarter

I Th 7:00 Mech. Engineering 214, LaJoy

February 14-May 1

II Th 7:00 Mech. Engineering 214, LaJoy

Mechanisms of Modern Automatic Machinery I-II. 3 Extension credits each semester. \$15.

A course designed to give a fundamental background in mechanical movements. Part I includes a short historical résumé of inventions which have led to our present-day mechanization; a discussion of the modern components of machinery involved in industrial, automotive, and agricultural applications will follow, including toggle mechanism, quick-return mechanism, straight line motion, cams, gear trains, clamps, etc. Part II is a continuation of Part I with special emphasis on power transmission and mechanisms involved in packaging, vending, and conveying applications. In addition, some time will be devoted to complete analysis of mechanisms in general. Twelve 3-hour meetings. Prerequisite: consult instructor.

Fall Quarter

I W 7:00 Mech. Engineering 208, Baillif

February 13-April 30

II W 7:00 Mech. Engineering 208, Baillif

Instrumentation and Automatic Control I. 3 Extension credits. \$15 plus \$5 laboratory fee.

An elementary course planned to cover the principle of operation of the many instruments and automatic controls in commercial use today. Control instruments and control circuits will be studied in detail. Both electrical and pneumatic methods of obtaining control modes such as on-off or two-position response and throttling of modulating responses will be covered. The course will be divided between lecture and laboratory. In the laboratory students will be familiarized with the actual instruments and control circuits. This will be integrated with lecture work and control design problems. Twelve 3-hour meetings. Prerequisite: consult instructor.

Fall Quarter

W 7:00 Mech. Engineering 214, LaJoy

Instrumentation and Automatic Control II. 3 Extension credits. \$15 plus \$5 laboratory fee.

This course is planned to cover more of the industrial instruments and automatic controls. The theory of control will be covered mathematically, descriptively and graphically. Basic modes of control built into commercial industrial controllers such as proportional, automatic reset and rate response will be covered in detail. Methods of obtaining these responses such as electrically, hydraulically or pneumatically will be analyzed. Typical industrial control circuits will be investigated. This will involve analysis of all component parts such as the process, measuring means, recording or indicating instrument, controller, and final control elements. Twelve 3-hour meetings. Prerequisite: consult instructor.

February 13-April 30

W 7:00 Mech. Engineering 214, LaJoy

Machine Tool Operation I-II. 4½ Extension credits each semester. \$22.50 plus \$5 laboratory fee.

Lecture and laboratory covering the selection and use of jigs, fixtures, gauges, and machine tools for the manufacture of a ½ H.P. electrical motor. Selection of the proper cutting tools and determination of the machine speeds for various materials. Preparation of manufacturing analysis and estimation of the machining time for the manufacture of metal products in small and large quantities. The laboratory project (ordinarily an electric motor) can be purchased at cost of material. Class limited to 20 students, accepted in order of registration. Prerequisite for Part II: previous semester's work or equivalent.

Fall Semester

I M 7:00 Mech. Engineering 114, Crowder

Spring Semester

II M 7:00 Mech. Engineering 114, Crowder

Tool Design I-II. 3 Extension credits. \$15 plus \$1 laboratory fee.

This course covers the analysis of piece part blueprints and of the best tools, machines and method of holding the work piece during the manufacturing operations. Estimating the machine production time for manufacture through the use of various types of jigs and fixtures. Design of the best type of jig or fixture for the manufacturing operation. Twelve 3-hour meetings. Prerequisite: Machine Tool Operation II or equivalent.

Fall Quarter

I T 7:00 Mech. Engineering 325, Crowder

Spring Quarter

II T 7:00 Mech. Engineering 325, Crowder

Inventions and Patents. 3 Extension credits. \$15.

A lecture course dealing with problems associated with inventions, their patenting, development, evaluation, and exploitation. Twelve 3-hour meetings. No prerequisite.

Fall Quarter

T 7:00 Mech. Engineering 214, Kemler

Tool and Gauge Inspection. 4½ Extension credits. \$22.50 plus \$5 laboratory fee.

This course covers the mechanics of tool and gauge inspection such as the following: calibration, repair and adjustment of micrometers and dial indicators, measurement of gauges with supermicrometers and gauge blocks, checking of thread gauges and adjustment of thread ring gauges, measurement of drill jig hole locations, use of toolmaker's microscope, microprojectors to measure form tools, hardness testing and measurement of surface finishes with Brush Surface Analyzer. No prerequisite. Class limited to 20 students. Repeated spring semester. Meets 2½ hours.

Fall Semester

Th 7:00 Mech. Engineering 155, Crowder

Spring Semester

Th 7:00 Mech. Engineering 155, Crowder

Aircraft Power Plants I-II. 3 Extension credits each semester. \$15 plus \$1 laboratory fee.

Basic theory of jet propulsion, gas turbines, and reciprocating engines. Engine types, construction, compressor and turbine configurations, and combustion and combustion chambers. Problems of lubrication, cooling and ignition. Performance and performance charts with relation to operating variables such as speed, temperature, pressure and altitude. Fuels, fuel specifications, metering systems and fuel controls.

Fall Semester I W 7:00 Mech. Engineering 321, Murphy **Spring Semester** II W 7:00 Mech. Engineering 321, Murphy

Heating, Ventilating, and Air Conditioning I-II.† 4½ Extension credits each semester. \$22.50.

A course designed to present the fundamentals of heating, ventilating, and air conditioning to those interested in designing, installing, selling, or recommending the modern type of appliances for heating, ventilating, and air conditioning installations. The subject matter of this course deals with terminology; heat transfer and heat transmission coefficients; all sources of heat loss from a structure; heating loads and heating costs; determination of temperatures in various parts of a structure; vapor transmission, problems; design of gravity and mechanical warm air heating systems; design of gravity and forced hot water heating systems; design of wet and dry panel heating systems; design of steam heating systems; fuels and combustion; and combustion equipment selection and controls. Class limited to 40 students accepted in order of registration. Prerequisite: high school mathematics or consent of instructor.

Fall Semester I W 7:00 Mech. Engineering 302, Borry **Spring Semester** II W 7:00 Mech. Engineering 302, Borry

Heating, Ventilating, and Air Conditioning III-IV.† 4½ Extension credits each semester. \$22.50.

A continuation of Heating, Ventilating, and Air Conditioning I-II with special emphasis on air conditioning. The subject matter to be covered will include heat and thermodynamics, properties of air and water vapor mixtures, the psychometric chart and its application to problems, physiological principles, the fundamentals of air flow and pressure losses, principles of air distribution, heat gains and cooling load calculations, air duct design, humidification and dehumidification, air cleaning devices, characteristics and selection of fans, noise and sound control, and vibration problems. Class limited to 40 students accepted in order of registration. Prerequisite: I-II or consent of instructor.

Fall Semester III T 7:00 Mech. Engineering 302, Whitnah **Spring Semester** IV T 7:00 Mech. Engineering 302, Whitnah

Refrigeration I-II. (Not offered 1951-52.)

Production Control. See Production Planning and Control, page 56.

Time Study. See Work Measurement and Production Standards, page 56.

Motion Study. See Work Simplification, page 56.

Engineering Plant Layout. See Industrial Plant Layout, page 56.

Elementary Quality Control. See Elements of Quality Control, page 57.

Industrial Safety and Hygiene. See page 57.

METALLOGRAPHY

1-2 Metallography and Heat Treatment. 3 Extension credits each semester. \$15 plus \$2 laboratory fee.

A beginning course for those engaged in practical heat treatment, metal working, specification writing, buying or selling steel. Lectures and laboratory work in pyrometry microscopic examination of metals, heat treatment of steel, case hardening, and specifications. Second semester: hardenability and weldability, hardenability tests, SAE alloy steels, tool and high speed steels, stainless steels, bearing metals, brasses, aluminum alloys. No prerequisite but 1 must precede 2 unless student has had experience in heat treatment.

Fall Semester 1 W 7:00 Appleby 315, Jerabek **Spring Semester** 2 W 7:00 Appleby 315, Jerabek

† See Information, page 6.

MILLING ENGINEERING**Products Control in the Grain Processing Industry.** 3 Extension credits. \$15.

The University of Minnesota cooperates with the American Association of Cereal Chemists in presenting a series of lectures on policy and practice in the control of product quality in flour milling and grain processing industries. Class limited to 50 students. No prerequisite.

Spring Semester

Th 6:45 McKnight Bldg. 250

Advanced Problems in Grain Marketing. 3 Extension credits. \$15.

An analysis of some of the more important problems that arise in grain marketing such as transit privileges, hedging and spreading operations, clearing procedures, price relationships, government controls, and related problems. In order to provide ample opportunity for participation by the members of the class in the general discussions, the enrollment will be limited to those with adequate previous training and experience. Class limited to 20 students. Prerequisite: three years of work experience and employer's recommendation.

Winter Quarter

T 4:00-6:30 N.W. Bank Bldg. 690, Cox and others

Practical Problems in Flour Milling. 3 Extension credits. \$15.

A group study program designed for advanced students and young men in operative positions covering mill control, grain cleaning, bulk storage, sanitation, maintenance and recent developments in milling techniques. Lectures and discussion by qualified men from industry. Prerequisite: consent of instructor.

Fall Semester

T 6:45 McKnight Bldg. 250, MacKenzie and others

FACULTY

Immanuel C. Fischer, M.S., Assistant Professor of Engineering
Albert M. Fulton, Ph.M., Assistant Professor of Speech
Leah M. Lewis, B.S., Assistant Professor of Interior Design
Helen P. Mudgett, M.A., Assistant Professor of Intercultural Education
Wendell White, Ph.D., Associate Professor of Psychology

Note: Owing to uncertainties of some departments as to future staff and unavoidable last minute additions and changes, this list is necessarily incomplete.

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Lauress Ackman, LL.B., Instructor in Business Law
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Henry E. Allen, Ph.D., Professor and Co-ordinator of Students' Religious Activities
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Glen Blanche, M.A., Teaching Assistant in English
Marthe W. Blinoff, Agregation d'Anglais, Instructor in Linguistics
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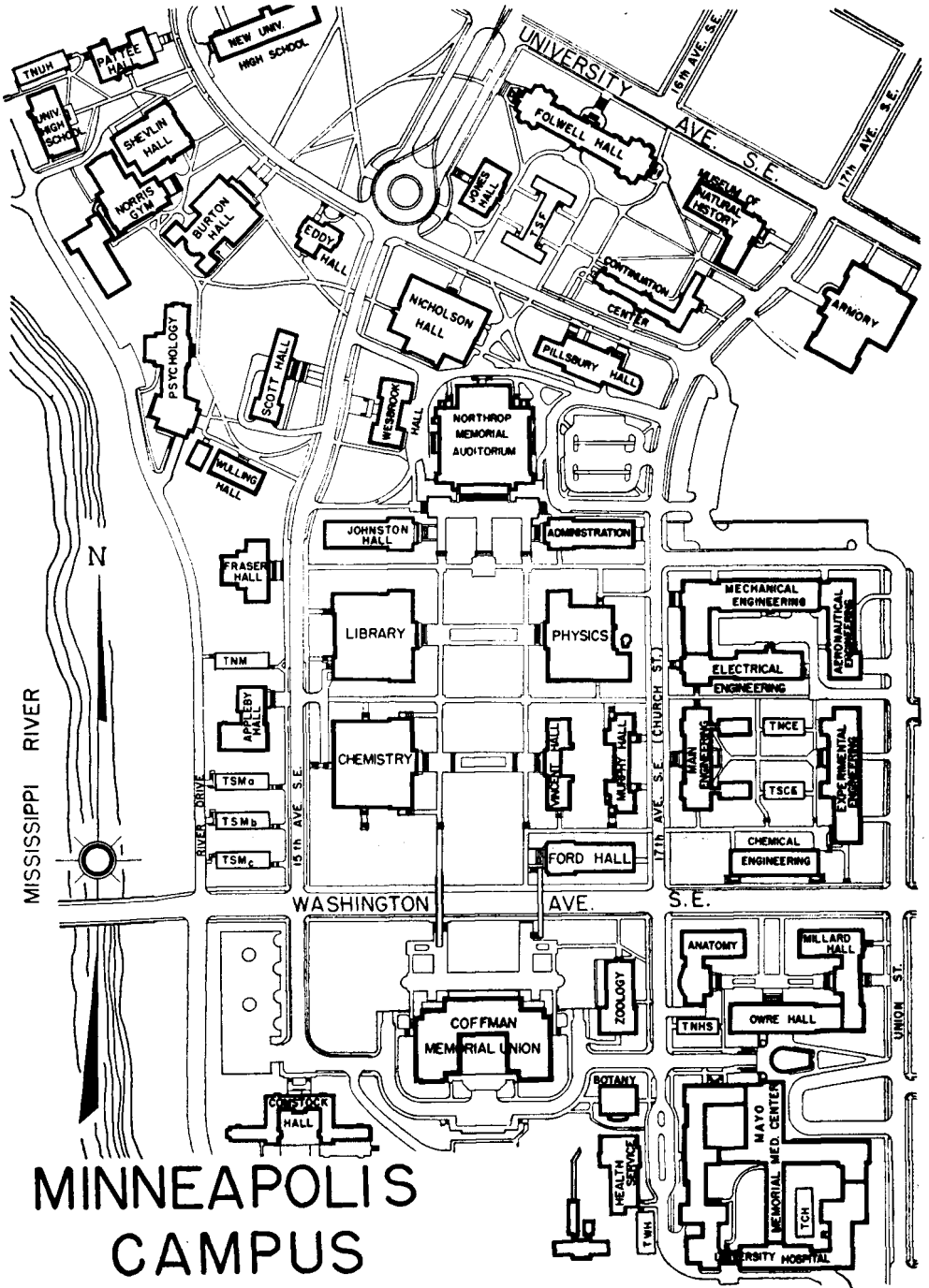
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